

U. M.

THE JOURNAL
OF THE
ANTHROPOLOGICAL INSTITUTE
OF
GREAT BRITAIN AND IRELAND.

FEBRUARY 9TH, 1875.

Colonel A. LANE FOX, F.S.A., *President, in the Chair.*

The minutes of the previous ordinary meeting were read and confirmed.

The following new members were announced :—THOMAS J. GREENFIELD, Esq., 6, Pump Court, Temple; JOHN COLLINSON, Esq., 3, Lightfoot Road, Hornsey; J. D. B. GRIBBLE, Esq., Cuddupah, Madras; and ROBERT R. JONES, Esq., Grosvenor Club, Pimlico.

The following list of presents was read, and the thanks of the meeting were voted to the respective donors.

FOR THE LIBRARY.

From the EDITOR.—*Revue Scientifique.* Nos. 28-32, 1875.

From Messrs. LONGMANS & Co.—*The Native Races of the Pacific States of N. America.* Vol. I. (Wild Tribes). By H. H. Bancroft.

From the SOCIETY.—*Bulletin de la Société Impériale des Naturalistes de Moscou.* No. 2, 1874.

From the SMITHSONIAN INSTITUTION.—*Smithsonian Contributions to Knowledge.* Vol. XIX. *Smithsonian Miscellaneous Collections.* Vols. XI. and XII.

From the SOCIETY.—*Bulletin de la Société d'Anthropologie de Paris.* Vol. IX. No. 3.

From the AUTHOR.—*Sur l'Origine et la Repartition de la Langue Basque, Basques Français et Basques Espagnols.* By Dr. Paul Broca.

From the SOCIETY.—*Proceedings of the Royal Society.* Vol. XXIII. No. 157.

From the EDITOR.—*Nature* (to date).

VOL. V.

B

From the SOCIETY.—Proceedings of the Philosophical Society of Glasgow, 1874.

From the SOCIETY.—Transactions of the Society of Biblical Archaeology. Vol. III. Part I.

From the SOCIETY.—Proceedings of the Royal Geographical Society. Vol. XIX. No. 1.

From the Editor.—*Matériaux pour l'Histoire Primitive et Naturelle de l'Homme*. Vol. V. No. 9.

Professor W. BOYD DAWKINS, F.R.S., exhibited a series of stone mining tools from Alderley Edge, and made the following remarks:—

On the STONE MINING TOOLS from ALDERLEY EDGE, CHESHIRE.

By Professor W. BOYD DAWKINS, M.A., F.R.S.* [With Plate i.]

IN May, 1874, Mr. H. Wilde and myself happened to take a walk to the new excavations which were in progress at the copper mines at Alderley Edge, which penetrate the rock on the east side of "the Street Road," leading to Alderley. The Lower Keuper sandstone in that place is impregnated with carbonate of copper, in search of which tunnels had been driven into the base of the hill, in the main parallel to the strata, having there a dip to the west of about 29°. In following the ore from the deep upwards the miners had worked their way to the surface, on the hillside immediately above the heaps of refuse near the reducing tanks, and laid bare a considerable portion of the rock. While walking over this surface, which was fantastically hollowed, a worked stone happened to catch my eye; and when we examined the stones lying about in the hollows we saw at once that a large number had been used in mining operations; and of these, owing to the kindness of the manager and the captain of the mine, we were able to secure thirty-five, which are now lodged in the Museum at the Owens College.

These mining tools are divisible into three classes: 1, the hammers with a simple groove round the middle for the retention of the withy which formed the handle (Plate i. fig. 1); 2, the tools which, besides this groove, have one of their ends also grooved for the reception of another withy, and thus were prevented from slipping when a blow was struck (figs. 3 & 4); and lastly, there were two implements (fig. 2) which probably had been used as wedges, being possessed of an edge blunted by wear, and exhibiting marks of having been struck on the other. One of these has a surface which looks as if it had been glaciated,

* This abstract was prepared for the Manchester Lit. and Phil. Soc.

and the second, in shape very much like a celt, is remarkable for the clear evidence which its surface offers, that the groove around it for the reception of the withy was cut *after* the stone had been ground to its present shape, and probably long after, in consequence of the decomposition of the surface of grinding as compared with that of the groove.

All these implements were derived from the ice-borne stones of the boulder clay, of which they were merely picked specimens which happened to be useful for the special purpose of mining.

Subsequently, in the autumn of 1874, many more specimens were obtained by Col. Lane Fox and myself, through the kindness of Lord Stanley of Alderley and the manager of the mine, and we were able to make a careful examination of the conditions under which they were found. To pass over those which have been buried, the number which I have examined is considerably over one hundred, belonging to the three types mentioned above.

The rock where the tools were met with was hollowed out irregularly and evidently artificially, and to a depth, in some cases, of from 8 to 11 feet from the surface. And from an examination of the ground it was perfectly obvious that the ancient users of these tools had worked the metalliferous portions from above, without attempting to make galleries. The tools lay buried in the *débris* which had been thrown into the old surface workings after they had been discontinued, and which presented all the characters of "a wheelbarrow formation," and were found in the greatest abundance near the bottom.

Stone hammers of the kind mentioned above, and especially of the simple grooved class, are very widely distributed. They have been found equally in the ancient copper mines of Anglesea, of Spain and Portugal, and of Lake Superior. With these also the Egyptians worked the turquoise mines of Wady Magarah, in the Sinaitic peninsula. They undoubtedly represent one of the ruder and probably earlier stages in the art of mining. With the solitary exception offered by the turquoise mines at Magarah, they have only been discovered in old copper workings, and they may, therefore, be inferred to have been used in ancient times mainly for the extraction of that metal.

I will not venture to attempt to assign a date to the mining operations carried on at Alderley, when these implements were in use. In all the ancient mines, worked by the Romans, so far as I know, iron tools have alone been met with. Nor am I aware of any mines, of post-Roman date, in Europe which have been carried on with tools composed of any other material. It would, therefore, seem probable that they are of pre-Roman

age, and that they are of the class termed prehistoric by the archaeologists.

Nor is it absolutely certain what metal was sought in these surface workings, because ores of copper, cobalt, lead, iron, and manganese are associated together in that spot. If they were in search of copper, the ore must either then have been richer than that which they left behind, or they must have been acquainted with some mode of reducing the small percentage of copper (which averages considerably less than 5 per cent.) from the matrix, of which we are ignorant. This is at present effected by a bath of hydrochloric acid. Possibly, like some of the joint-stock companies of the present day, they may have been seeking for copper without success; but in that case the large number of stone hammers is not explained. Had tools such as these been used for the extraction either of lead or of iron they would most probably have been discovered in the workings which have been carried on throughout Great Britain, certainly since the Roman occupation to the present day. And it is hard to believe that the miners of Alderley worked these metals in a ruder fashion than any others in this country, so far as the present evidence stands. Nor is it at all likely that the insignificant and obscure ores of lead and iron at Alderley would attract the notice of miners in ancient times, when both were obvious, and very rich in the adjacent districts of Lancashire and Derbyshire.

The only conclusion which I will venture to draw, is that these implements imply a ruder phase of the art of mining than has hitherto been known in the neighbourhood of Manchester—a phase which may point back to the bronze age, when the necessary copper was eagerly sought throughout the whole of Europe.

EXPLANATION OF PLATE I.

Stone tools from ancient mines at Alderley Edge, Cheshire; in the collection of Colonel Lane Fox.

Fig. 1. Stone hammer, with groove for withy running round the middle of the tool.

Fig. 2. Stone wedge, with flat head and groove for withy.

Fig. 3. Stone pick, with two grooves transverse to each other at the upper end.

Fig. 4. Head of a stone tool, probably a pick, with two grooves as in the last specimen, but more clearly defined.

DISCUSSION.

The PRESIDENT said that on hearing from Mr. Boyd Dawkins of his discovery, he had written at once to Lord Stanley of Alderley, who had kindly directed that the works in that part should be

stopped until Mr. Dawkins' return from abroad. Mr. Dawkins had, therefore, had the whole of the investigation entirely in his own hands. And it would be well if all similar discoveries were in equally good hands, whether in regard to the scientific competence of the discoverer, or the obliging care shown by the landlord to preserve the relics until they could be duly investigated on the spot. Unfortunately it does not appear that any evidence of value has turned up to fix the date of these ancient mines. The resemblance of these hammers to those found in ancient copper mines elsewhere is worthy of the attention of anthropologists.

Dr. SIMMS exhibited and described five Lapp skulls, and made some remarks on the physical characters of the Lapps.

During his visit to Lapland, in the summer of 1874, he took measurements of a number of individuals. The physique of the Laplander is characterised by a relatively large head, bold forehead, small eyes, broad chest, long, powerful arms, and short, feeble legs. Dr. Simms maintained that the disproportionate length of arm was not to be regarded as a racial characteristic, but rather as the natural consequence of the Laplander's mode of life. The Lapps are expert oarsmen, spending much of their time in summer in fishing, and in winter they are much in their sledges drawn by reindeer. Dr. Simms observed that these occupations tended to develop the arms, especially during the years of growth, whilst the comparative disuse of the legs might account for their smallness and feebleness. He concluded, from his measurements, that those Lapps who follow boating have relatively longer arms than those who from early life have followed other occupations.

Mr. Brabrook read the following Paper for the Author:—

THE BASQUE and the Kelt: an Examination of Mr. W. Boyd Dawkins' paper, "The Northern Range of the Basques," in the Fortnightly Review, September, 1874. By Rev. WENTWORTH WEBSTER, M.A.

"THE danger of all scientific work at present—not only among Oriental scholars, but, as far as I can see, everywhere—is the tendency to extreme specialisation." The truth of this remark of Max Müller, at the recent Congress of Orientalists, is perhaps nowhere more evident than in the present state of what is called the "Basque Problem." The problem is an exceedingly complex one, and is one which can be fully resolved by no one line of scientific inquiry; yet at present it seems as if almost every student of any one line persistently closed his eyes and ears to what is being done in other lines by other investigators.

Hence we have papers, on the one hand, like that of Mr. Boyd Dawkins, "On the Northern Range of the Basques," in the *Fortnightly Review* for September, 1874; and, on the other hand, like that of M. Van Eys, "La Langue Iberienne et la Langue Basque," in the *Revue de Linguistique*, Juillet, 1874. Mr. Boyd Dawkins, taking his supposed facts from, and founding his theory on, anthropology alone, arrives at the conclusion that Kabyles, Berbers, Iberians, Basques, Black Kelts, Bretons, Welsh, and Irish, are all the same race, with Ligurians and others as cognate races. M. Van Eys, keeping his eyes steadily fixed on Basque grammar and philology alone, arrives at the opposite conclusion, viz. that the Basques are not even Iberians, and altogether denies the conclusions of Humboldt and others, as to the presence of Basque names in parts of Spain and France beyond the limits in which the Basques are actually found. So the question stands between pure anthropologists and pure philologists. Meanwhile, all other branches of the question are almost wholly neglected—historical and archaeological researches, folk-lore, peculiarities of temperament, intellectual or moral, literature, drama, manners, and, strangest of all, even the physical characteristics of the present Basques—all the "differentiæ" which distinguish them from the surrounding peoples, and without the consideration of which the problem cannot be satisfactorily solved,—all these are utterly neglected. It was one excellence—and, we think, no slight one, whatever his other faults may be, and we are far from subscribing to all his conclusions—of M. Bladés's "Etudes sur l'origine des Basques" (Paris, 1869), that he endeavoured to give therein a "conspectus" of the whole field of inquiry, and to state the whole of the evidence; but since that time nothing at all similar has been attempted. Nay, we know but of one other student—M. d'Abbadie, de l'Institut—whose interest embraces the whole field of inquiry; who collects and co-ordinates facts in all branches alike, whether in philology, anthropology, archaeology, history, or folk-lore, and who notes with equal zeal all that may throw light on the mental and physical peculiarities of the present Basques.

Our attempt in this paper will be to show how incomplete and inconclusive (as appears to us) is the evidence of anthropology alone, and especially to examine the arguments of Mr. Boyd Dawkins in his paper in the *Fortnightly Review* of September last.

Before entering on this, however, it may save time if we state the outlines of what we consider has been proved about the Basques in other studies than that of anthropology. First, we consider that philology has demonstrated that the Basque

language (Escuara) is agglutinative, or Turanian, taking that word in its widest acceptation, and that consequently it has no relation, whether of descent or parentage, to any Aryan or Semitic tongue. Secondly, we believe that Humboldt's conclusion is correct as to the existence of Basque names in the classical itineraries and geographies of Spain. Thirdly, that although the question of the identity of Basque and Iberian cannot be considered to be perfectly demonstrated so long as the so-called Kelt-Iberian numismatic legends and inscriptions are undeciphered, still the degree of probability is very high. To borrow the opening phrase of Mr. Boyd Dawkins' paper, we should consider non-Aryan, Basque, and Iberian to be nearly parallel to Aryan, Greek, and Pelasgian. The arguments as to the identity of the Hellenic race with the Pelasgic race we imagine to be pretty much in the same state as that of the Basque with the Iberian.

We find it sometimes difficult to state with precision the arguments of Mr. Boyd Dawkins; for one of the great disadvantages of the extreme specialisation of the sciences noted above is, that adepts in one branch of science are constantly at sea when handling the terminology of another, and from Mr. Boyd Dawkins' loose use of historical terms, we are occasionally left quite in the dark as to what his meaning may really be. We beg him to believe that we do not wilfully mistake him; e.g. on his first page, speaking of the population of Spain in the time of Thucydides, he writes, "The Vascones then, as now, held the Basque provinces, and probably occupied the adjacent parts of Southern France." If by Vascones he means the Basques in general, then his statement of their range in the time of Thucydides might be extended with probability far beyond the parts of France adjacent to the Spanish Basque provinces. If by the Vascones he means the Iberian tribe of that name, then there is simply no evidence that they ever were in France at all. In another place he speaks of a "Basque inhabitant of Bagnères de Bigorre." Here, again, we are completely puzzled; it is exactly like speaking of a Welsh inhabitant of Wiltshire. The average Béarnais-Gascon of Bagnères de Bigorre is no more like the average Basque than the average Welshman is like the average Englishman.* We cannot decide whether Mr. Boyd Dawkins supposes Bagnères de Bigorre to be actually within the limits of the present Basque country, or whether he refers to a probable prehistoric location of the Basques in that district. If the former, it is a blunder scarcely

* The writer lived four years at Bagnères de Bigorre before coming to the Pays Basque.

excusable in a paper professing scientific accuracy. If the latter, to compare a "Welshman who is *now* to be seen walking about the streets of St. Asaph" with a Basque who disappeared from the earth in prehistoric times, is at least a curious expression, especially when the argument is brought forward to confirm the truth of an assertion of Tacitus. We may as well state our opinion on this much disputed passage of Tacitus* before going further. The restriction of the term *Hiberos* or *Iberos* to the Basques in this passage seems to us an instance of a not uncommon mistake of scientific men when dealing with ancient authorities, viz. that of importing into rhetorical classical writers their own strict accuracy in the use of scientific terms. *Iberi* or *Hiberi* was the received poetical and rhetorical term for Spaniards generally in Tacitus' day,† and he doubtless only meant to draw attention to the likeness between the Spaniards generally and portions of the Keltic inhabitants of Britain—a likeness which is equally evident in the present day, but of Spaniards and not of Basques. Only the other day we heard repeated, by the military correspondent of an English paper, a remark which we have frequently heard before, viz. how like the men of the Spanish regiments, especially the Castilian (from the country of the old Kelt-Iberians), are to the Irish, and especially to the Connemara men, with the same projecting jaw and style of march. "I could almost have sworn they were Irish regiments," said my informant. This Spanish likeness is doubtless what Tacitus meant. But the Basques are very different.‡ No mediæval historian—or, indeed, scarcely any historian till quite recently—would distinguish Basques from Spaniards, when speaking of Spain; the differ-

* Tacitus, Agricola, xi. "Namque rutilæ Caledoniam habitantium comæ, magni artus, Germanicam originem adseverant. Silurum colorati vultus, et torti plerumque crines, et posita contra Hispania, Iberos veteres trajecisse, easque sedes occupasse fidem faciunt: proximi Gallis, et similes sunt."

† Cf. Jornandes "de Getarum sive Gothorum origine et rebus gestis," cap. ii., where he seems to paraphrase this passage of Tacitus. "Sylorum (Silures) colorati vultus, torto plerique crine, et nigro nascuntur, Caledoniam vero incolentibus, rutilæ comæ, corpora magna sed fluida; qui Gallis sive *Hispanis* à quibusque attenduntur assimiles. Unde conjectavere nonnulli, quod ea ex his accolæ continuo vocatos acceperit; inculti æque omnes populi, reges que populorum." As to Pliny's "Aquitania Armorica ante dicta," compare the introduction to Long's edition of "Cæsar de Bello Gallico," p. 26, and the notes on vii. 75, and viii. 31. The name simply means maritime, or, rather, "parceanitic."

‡ "The population of this neighbourhood (Tolosa) has nothing Spanish in its physiognomy and expression; indeed, I could pick out of a Dorsetshire village many more effective representatives of the Don than we saw anywhere between Irun and Vittoria. Guipuscoa is one of the three Basque provinces, and its inhabitants still exhibit that comparative fairness of complexion which they have inherited from some sea-king, who once upon a time made a descent, and then a permanent settlement, on these coasts."—"An Autumn Tour in Spain in 1859," by Rev. R. Roberts (p. 49). London, 1860.

ence of race and language would most probably be unknown, except to professed geographers.

The conclusion of Mr. Boyd Dawkins which we especially dispute is the following:—"At all events, the former presence of an Iberian race in Armorica is demonstrated by Dr. Broca's map of the stature and complexion of the people of France."

With reference to this map, and the conclusions drawn from it, we must first remind our readers that the Basques at present inhabit only the greater portions of two "*arrondissements*" in the Department of the Basses Pyrénées; consequently, in considering France by departments, the average of any peculiarity they may possess in stature, colour of hair, eyes, and complexion, must be greatly modified by taking the average of the whole department together.* Suppose, for instance, that in two parishes of an English county fair-haired people lived, and black-haired in all the other parishes of the same county, and far outnumbering them; it is evident that in distributing all the counties of England into black, brown, or fair, these fair-haired people might be utterly sunk in the total, and be spoken of as brown or black-haired, however fair this minority might be. Something similar to this is the case with the two Basque "*arrondissements*," when France is considered in departments only.

The conclusions of Mr. Boyd Dawkins, and of all those who derive the Black Kelts from the Basques, depend on two supposed facts:—(1) the form of the Basque skull, both ancient and modern; and (2) the stature, complexion, colour of eyes, and hair of the living Basques. For this argument the typical Basque skull is assumed to be dolichocephalous; but it is dolichocephalous in a peculiar way—the posterior portion is elongated, and not the anterior. And there is also another peculiarity: long as the posterior portion is, there is no occipital protuberance, but an unusually strong posterior base of the skull; and this form of the skull doubtless occasions the remarkably upright carriage of the Basque of the present day. The facial angle is good, and the jaw peculiarly orthognathous, often opisthognathous.† Secondly, the Basques are assumed to be

* The Basques are about 120,000, certainly not more, in a population of from 430,000 to 450,000 in the Department of the Basses Pyrénées.

† "J'ai à peine besoin de rappeler que les crânes de Z— (Zaraus, the most unmixed, as we shall see below) sont dolichocéphales d'une tout autre manière que ceux du nord de la France; que leur dolichocéphalie est *occipitale*; qu'elle coïncide avec une face petite, très orthognathe, souvent même opisthognathe, avec une réduction remarquable de la protuberance occipitale, autant de caractères qui distinguent les Basques Espagnols de tous les groupes connus de dolichocephales indo-Européens."—"Mémoire sur les crânes Basques," par M. Paul Broca, Paris, 1868 (pp. 52, 53). [The italics are M. Broca's.]

low in stature, of dark complexion, hair, and eyes. We will examine these two points in order; but we must first remark, that in any comparison of Kelts with Basques we should have expected the more permanent points of likeness, and those less liable to change, would have been chosen to constitute the proof of identity; but the contrary is the case. It is not asserted that the skull of the dark Kelts of the present day at all resembles the skull of either past or present Basques, the one being eminently orthognathous, and with a high facial angle, the other with an inferior facial angle, and prognathic. It is on the colour of the hair, eyes, and complexion, and lowness of stature, that the stress of the comparison rests. Yet these would surely change more quickly than the form of the skull. Besides, the comparison in prehistoric times depends entirely on the form of the skull, and we fail to see how the colour of the hair, eyes, and complexion can be deduced therefrom.

Let us now consider the localities whence the typical Basque skulls were taken. They are—fifty-eight from St. Jean de Luz, seventy-eight from Zaraus, and six from Bilbao. Those from St. Jean de Luz are said to have been collected in the reign of François I., 1532. We first ask, what certainty or high degree of probability is there that these are Basque skulls at all? At the present day, after a six years' residence in St. Jean de Luz, and a pretty close knowledge of its inhabitants, we are confident that (excepting domestic servants from the country) there are not a dozen even relatively pure Basque families in the place. Certainly the population is a most mixed one. To search for a pure Basque type there is something like searching for a pure English type at Liverpool or Wapping. And the history and archives of St. Jean de Luz show that the population was even more mixed in the sixteenth century than at present. This is allowed by Dr. Broca, who finds these fifty-eight skulls so far from being frankly dolichocephalous, that they exhibit two distinct types, of which he says (p. 21), "*Ici (à St. Jean de Luz) les brachycéphales prédominent manifestement.*" Bilbao, also, was formerly one of the naval arsenals of Spain, and would thus be liable to a mixture of population. Zaraus is also a small seaport on the coast of Guipuscoa, but, as we should have expected, the skulls thence show less admixture than the others; yet even there the dolichocephalous are only 48·33 per cent., while the mésaticéphalous and the brachycephalous together are 51·67 per cent. But none of these are fitting spots whence to select typical skulls. In a sailor race like the Basque we should have thought the seacoast especially to be avoided, and next to that the neighbourhood of the great roads, whether ancient or modern; and also

the extreme Franco-Spanish frontier on both sides, which has been a place of refuge for generations.* Only in localities apart from these is there the least chance in the present day of judging what the Basque race really was.

At the same time that M. Broca procured these skulls, he requested M. Argeliez, a medical man of St. Jean de Luz, and a native of the neighbourhood, to make observations on the colour of the hair and eyes of the Basques. This M. Argeliez did very carefully, not making his observations on the first comers, but only on those families whom by personal inquiry he ascertained to have been pure Basques for at least two or three generations. The result, given at pp. 64, 65 of M. Broca's pamphlet, is—that of forty-seven Basques examined, twenty-five had brown eyes (ten of which were very light brown), and twenty-two blue, green, or grey eyes (fourteen blue, seven green, one grey), and this in the part of the Pays Basque where the population is the darkest. Yet this is the race set down dogmatically as a dark race. It almost seems as if there were a fashion in scientific observation, as in other things. The observers of the last generation were driven to invent theories to account for the fairness of the Basques; the anthropologists of the present day declare them to be dark. Arthur Young, Sir W. Napier, and Ford (and I know not where we can find three better observers), all declare them to be fair. Ford, speaking only of the Spanish Basques, who are undoubtedly somewhat darker than their kinsmen in France, says (Murray's Handbook, vol. ii., p. 873): "The Basques have been less successful in resisting invasions by sea, for they were partly overcome by a fair-haired Northman, named Zuria, an adventurer either from Norway or Scotland; and to this foreign admixture *their fair complexions* and immemorial representative government have been traced." So in France, theories of admixture with Visigoths, Franks, Cagots, English, and Northern pilgrims have been formed, to account for the same fact. It was only from hasty generalisation from the observations of MM. Quatrefages and Broca on the sea-coast, where the population is decidedly more mixed and darker than in the interior, that the theory arose that the present Basques are a dark people. Yet even M. Quatrefages, "*reconnu plus tard qu'il y avait aussi beaucoup de blonds parmi les Euskariens.*" "*J'en ai vu, dit-il,*

* The need of caution on the frontier may be shown by a personal anecdote. The first time we visited Bariatou, the last French village on the frontier, we were struck with the appearance of the people; all our former observations were reversed. But the first answer to our inquiries solved the difficulty. "Out of five hundred inhabitants of the 'commune,' at least four hundred are Spaniards" (i.e. Spaniards, not Basques; Spaniards and Spanish Basques are never confounded on the frontier). The place had been a refuge for generations.

un grand nombre dans les environs de Saint Sebastien, j'avais cru d'abord que la couleur claire de leur chevelure etait le résultat de quelque croisement; mais j'ai pu m'assurer que ces individus blonds présentaient, sous tous les autres rapports, les caractères de la race basque parfaitement pure. J'ai eu l'occasion de causer sur ce sujet avec M. d'Abbadie, il pense comme moi, qu'il y a de vrais Basques blonds."* Our own observations, carried on in almost every village of the French Pays Basque, and extending over some years, fully confirm this. One meets plenty of dark faces in the Pays Basque, and everywhere, perhaps, the darker Basques are in the majority; yet wherever there is an unusual preponderance of these, a mixture may be suspected. We admit the two types, fair and dark (and a third distinct from either), as readily as M. Broca admits the two types of brachy- and dolichocephalous skulls; only we maintain that the fair type—especially with blue or grey, or very light brown, eyes, with somewhat darkish hair, is the distinctive Basque type among the surrounding peoples, and that it will be found more numerous in proportion to the distance from the neighbourhood of the sea and the great roads, where the chances of admixture are the greatest.

Unfortunately, we have not seen M. Broca's map, and must therefore take an account of it from the pages of Mr. Boyd Dawkins. In it the departments are coloured "blancs, gris, et noirs," according to the colour of the hair, eyes and complexion, and stature, which range from highest to lowest according as the complexion, &c., varies from fair to dark. The populations of dark complexion and low stature in the departments "noirs" are supposed to be descended from the Basques. Consequently, if this theory be correct, we should expect to find the blackest departments to be those bordering on the Pays Basque, and that the department which contains the present Basques would be the darkest of all. But the facts do not seem to tally with this. The blackest departments seem to be those between the Loire and the Garonne; those to the south of the latter river are with one exception "gris." "Out of the eight departments into which it (Caesar's Aquitania) is now divided, only one (Landes) presents the Basque characters." The loss of Basque characteristics where they should most abound is accounted for

* "Souvenirs d'un Naturaliste," quoted by M. Bladé, "Etudes sur l'Origine des Basques" (p. 217), where are numerous other testimonies to the same effect. M. Bladé's own summary, in an additional note at the end of the volume (p. 537), is, "J'ai prouvé qu'il y avait des Euskariens bruns, blonds ou châains, et je suis à même d'affirmer qu'il existe chez ce peuple beaucoup d'hommes aux cheveux lisses et souples, et non pas 'toujours un peu raides et cassants.'" This, which our own observation confirms, disposes of Tacitus' "torti plerumque crines" being applied to the Basques.

"by the open and defenceless state of the country" (!). Their preservation in the Landes is accounted for "by the vast stretches of sand, and the gloomy pine forests, which have acted as barriers against invasion." The gloomy pine forests (*Pinus maritimus*) were all planted almost within the memory of the present generation ! * Again, "the six 'départements gris' south of the Garonne mark the settlements of the fair-haired Visigoths, Franks, and English, who have been masters of that country from the year 409 to the present day." This curious piece of history Mr. Boyd Dawkins seems to have extracted from M. Broca's pamphlet. There was, indeed, an English occupation of Guienne—that is, English kings and princes ruled as Gascon sovereigns over a Gascon population, and the Black Prince held a semi-English court at Bordeaux. English, Gascon, and Basque knights together commanded mixed armies, and occasionally English knights commanded Gascon garrisons ; but in both cases the majority of the privates would be natives of the country. Of Visigoths and Franks—especially of the latter, who were detested by the Basques, and southern populations generally—there was probably less mixture than in any other part of France. As to stature, which is said to vary with the complexion, according to the table quoted by Mr. Boyd Dawkins, there are only about half as many military exemptions on account of low stature in the departments "gris" as in the departments "noirs." The number of exemptions per 1,000 is—

Départements noirs . . .	75·47 à 147·85
„ gris . . .	54·77 à 74·40
„ blancs . . .	24·39 à 54·11

The only "département noir" out of the eight in Cæsar's Aquitaine is that of the Landes. But any one who may have seen the Landes before the railway traversed it will at once admit that that department should be put aside in any comparison with the other seven departments. The whole case is exceptional. The following is a description of the population given in "La Patrie," an encyclopædia of France, published at Paris, 1847. The article 'Géographie Médicale de la France' is written by Dr. A. de Pileur—"Population des Landes abâtardie ; les races d'animaux s'abâtardissent aussi dans les Landes. Misère, mauvaise nourriture ; millet, maïs mal cuits, mal préparés sans levain ; poisson salé fermenté, avarié, à peine cuit.

* That is, towards the close of the last (1787) and the beginning of the present century. During the Confederate Civil War, when the resin suddenly became most valuable, there was a curious law suit, whether the planters (i.e. the Government) or the proprietors of the land were the owners of *the trees*.

Malpropreté extrême. Hommes petits, maigres; teint brun, jaunâtre; air maladif. Enfants chétifs, se développant tout-à-coup de 16 à 20 ans; vieux à 40, dépassant rarement 50 ans." (The average of life in the Basses Pyrénées is 45 years.) "Fièvre intermittente endémique; type tierce le plus fréquent; rate hypertrophiée à un degré monstrueux, pesant quelquefois 15 kilog., sans dégénérescence," &c. All this results from malaria, and from drinking the water of the marshes, which cover almost the whole department. Surely no fair comparison can be made between a population under these abnormal conditions and others under normal and healthy ones. Thus, then, we have the fact that the departments from which, according to theory, the Basques must have last retired, and the department, part of which they actually inhabit, classed, not among the "noirs," but among the "départements gris." What, then, becomes of the theory that a dark complexion, with its accompanying lowness of stature, is derived from the Basques alone?

Next let us examine whether the Basques are lower in stature and darker than the rest of the population of their own department, the Basses Pyrénées. First we observe that the northern frontier of this department is conterminous with that of the Landes, and that the geological formation of this department extends for a few miles into the Basses Pyrénées; consequently, we should be prepared to find the population of that part of the department as dark as that of the Landes, and, therefore, to bring the whole department under the range of "gris," the southern portion must be more than usually fair. As to one of the three divisions—Labourd, Basse Navarre, and La Soule—into which the Pays Basque is divided, the testimony is unanimous. Every observer allows that the Souletins are fair and tall. A trustworthy informant assures us that at a pastorale played at Licq all the actors were up to, or approaching six feet, and these would all belong to the village or "commune" alone. This district, La Soule, is the one most remote from the sea, and from the great roads. In the other two districts, though the difference in height is not so marked in them, there can be no doubt that both Labourdin and Bas Navarrais are somewhat taller both than the average Frenchman and than the inhabitants of the adjacent plains.* Nowhere could this be better seen than at the assembling of the Mobiles at Bayonne,

* Cf. Michelet "Histoire de France," tom. ii. p. 47, Paris, 1852. Speaking of the fair of Tarbes, and of the different races which meet there: "Mais vous distinguerez bien vite le Béarnais et le Basque, le joli petit homme semillant de la plaine, qui a la langue si prompte, la main aussi, et le fils de la montagne qui la mesure rapidement de ses grandes jambes, agriculteur habile, et fier de sa maison dont il porte le nom."

in 1870-71, when each village brought its own contingent. As the Basques came in, one could not help remarking that no general need wish for finer material. The same remark is made by all who have seen the Spanish Basque regiments in the present Carlist war, especially by a military correspondent of the *Times* of Sept. 6, 1874, who asserts that our own recruits contrast most unfavourably with them. Yet this is the population from which the inhabitants of the Landes and the men of western and central France are said to derive their shortness of stature!

Next, are Bretons and Basques alike? Would there really be scarcely any difference discernible between them if a Welshman were placed among the Basques? Of course the races are not so distinct as that individuals may not be found with a very striking resemblance, the same as may be found in individuals, between Welsh and English, French or German, Spanish or Italian, or Hungarian, in fact, between individuals of any one European nation with individuals of any other. But is the type of the population alike? We have been fortunate in making the acquaintance of Messrs. Letrone, father and son, both of whom had been long engaged in archæological investigations in Brittany, before coming to reside in the Pays Basque. The son, moreover, is an artist of repute, and a most careful draughtsman. Both these gentlemen declare that they cannot see the slightest resemblance between the Breton and the Basque type. At my request, M. Letrone fils made, with the "camera lucida," in the neighbourhood of Itzatzou, portraits of Basques whom he considered to be typical representatives of the population. These individuals had all blue or grey eyes and light hair. Looking over the sketch-books of another artist, M. H. de Meurville, who has resided both among the French and Spanish Basques, which were filled with portraits of Spaniards, Italians, and French, in no particular order, I found no difficulty in distinguishing the Basques, and these again had almost all fair hair and eyes. The same artist, when requested to select a model for an amateur, without reference to beauty, but to type only, chose a fair-haired woman. Neither of these artists had any pet scientific theory to support. How, then, has the confusion arisen? From several causes. 1. There is undoubtedly more than one type among the present Basques; but even the dark Basques are not so dark as their Spanish neighbours. 2. Scientific observations have been made only along or near the sea-coast, where the population is both more mixed and darker than in the interior. 3. A careless observer is apt to mistake a sunburnt complexion for a really dark one, and does not remark the colour of the eyes, which often among

the Basques contrasts with the darker hair and sunburnt face.* 4. It is difficult for a stranger at first sight to know whether the individual he is looking at is a Basque, a Spaniard, or a Gascon. The number of foreigners in the Pays Basque is very great. In the towns, almost the only pure Basques to be seen will be the servants from the country, and the country people on market-days. Just now the moment is peculiarly unfavourable for making such observations. The frontier villages and the whole country are full of refugee Spaniards, and of the men at work on the high roads and in the towns the majority would be Spaniards or Gascons. It is only among the agricultural class, away from the great roads, and on the mountains, that the observer has a chance at first of studying the purer Basques; but when he has thus learned the type he will have no difficulty in distinguishing them from others in the towns, and at the weekly or fortnightly markets.†

It is not a bad test of a theory to see whether [it needs any extreme suppositions for its support. Among the partisans of the theory of the descent of the Black Kelts from the Basques, we notice a strange reluctance to admit the possibility of the existence of a natural type of men with brown hair and eyes. These are always regarded as of necessity the offspring of a mixture of fair- and black-haired races. Yet the necessity is by no means obvious. Is it not something like saying that all bay horses *must* be the offspring of a black and a white sire and dam? Again, in comparing the Kelt-Iberian with the Black Kelt, the Castilian Spaniard with the dark Irishman or Welshman, it seems to us more scientific to admit that their likeness arises from the known quality which they have in common as Kelts, than to invoke the less known quality of the one to compare with the wholly unknown quality of the other. Again, an undue stress is laid on the comparative height of the ancient Gaul with that of the Frenchman of to-day, and the authority

* A capital instance of what we mean is given in the following description of the famous Basque cura, Santa Cruz:—"By the way, none of the portraits published of Santa Cruz have the slightest likeness to him. He is everywhere represented as a very dark man, while in reality he is quite fair; certainly not fair in the sense of Scotch or German fairness, but what is called 'blond' in France, which is equally as far from dark brown or black as from 'blond cendré.' His blue eyes are rather deeply seated."—"Spain and the Spaniards," by N. Thieblin (Azamat Batuk), vol. i. p. 257. London, 1874.

† That a Basque can be distinguished from a Gascon the following anecdote shows:—"Nous nous trouvions sur le seuil de l'Hôtel des Touristes, à Laruns, dans la vallée d'Ossau, quand vint à passer un jeune homme aux traits nobles et réguliers et portant avec grâce ses vêtements de simple villageois. C'est un Basque, fit le maître d'hôtel, qui s'était aperçu de l'impression produite sur nous par cet étranger. A quoi l'avez vous connu lui dîmes-nous. *Rien qu'à le voir, repliqua-t-il.*" *Voyage de Bayonne aux Eaux Bonnes*, p. 57; par F. Samaueilh. Bayonne, 1858.

of a writer like Levy is invoked against the contemporary authority of a man like Cæsar, writing of the people before his eyes. It is evident* that the relative difference in the height of the Kelt of midland France and the German was at least as great in Cæsar's day as at present.

Another collateral argument brings great conviction to our mind. Whether we follow the march of Hannibal from Spain to the Rhone, or the campaign of Crassus into Aquitania,† we seem to pass, directly we get beyond the parallel of the Adour, into a different zone of civilisation, and into a distinctly different phase of religions. Although the Iberian race may have been since outstripped by the Keltic, it seems at that period to have been in possession of a distinctly higher civilisation. The Iberians and Kelt-Iberians were the most trustworthy and disciplined of Hannibal's troops, and under Sertorius proved themselves at least a match for the Roman legions. This the pure Kelts never did. The very tribe, the Vaccœi, from which the Basques probably derive their modern name, is pointed out by Diodorus Siculus as in his day the highest in civilisation of all the surrounding peoples.‡ It was probably owing to this higher civilisation that they did not disappear before the Kelts, but remained, or mingled with them, while the more uncivilised pre-Keltic peoples to the north have utterly disappeared. The scanty facts relating to religion point to a similar conclusion. From the Pyrénées to Brittany, from Basque to Kelt, we take a very wide step. The Keltic religion was so marked as to have attracted the notice of all classical authors; of either the Iberian or the Basque (whether they be separate or the same) not a trace remains. We know absolutely nothing of it. To judge from the few altars and inscriptions found in the Pays Basque, it would seem almost to have coalesced with the Roman. The same contrast is apparent in the reception of Christianity by the two races. The Kelts, whether in Asiatic Galatia, in France, in Spain, or in the British Isles, were among the most eager to receive Christianity. In the second century the martyrs of the Rhone Valley were celebrated throughout all the Churches. In the next century Christianity had penetrated through Gaul to Britain, and had subdued the whole of the Western Kelts. But to the close of the ninth century the Pays

* "Ex percontatione nostrorum vocibusque Gallorum ac mercatorum qui ingenti magnitudine corporum Germanos, incredibile virtute atque exercitatione in armis esse prædicabant." "Cæsar de Bell. Gall.," Lib. i. 39. The same inference may be drawn from the language of Tacitus and Jornandes, quoted above.

† "Cæsar de Bello Gall.," end of Lib. iii.

‡ "Χαρίστατοι δὲ τῶν πλησιοχώρων ἰδὲν αὐτοῖς ἐστὶ τὸ τῶν Οὐακκαίων ὄνομα· ζομίον σύστημα," Diodorus Siculus V., xxxiv. 3. All the classical authors speak with astonishment at the skill of the Iberians in mining in the Pyrénées.

Basque was to Gaul what Western Africa of the present day is to our missionaries—men went there to receive martyrdom.* We hear of martyrdom at Bayonne as late, perhaps, as the tenth century. Slowly Christianity won its way along the great Roman road to Pampeluna, and up the valley of the Nive to the Bastan. But La Soule and the sea-coast, to judge from the narrative of a bishop of Bayonne in 1120, were not fully converted until the twelfth century; while around them their neighbours—the Gauls to the north and east, and the Spaniards to the south—had for centuries past been giving most distinguished theologians to the Church. The same tenacity in clinging to an old faith appears in their resistance to Protestantism under Jeanne d'Albert. The founders of Jesuitism, Loyola Xavier, and others, were Basques, and Basques are still among the best and most fervent missionaries of the Roman Catholic Church. Loyola, even in physiognomy and physique, was a typical Basque, and preserved his Basque habits till his death. These facts, though by themselves utterly inconclusive, still do not point to identity of race with the Kelt, and it is incumbent on the upholders of the theory of a more northern limit of the Basque race to give some explanation of them, and also of the kindred fact that all trace of any former existence of the Escuara language ceases at the same northern limit, viz. somewhere about or beyond the parallel of the Adour.

To resume, we do not deny the possibility of Iberian trading establishments on the south and south-western coasts of the British Isles. Phœnician and Carthaginian ships navigating the Atlantic were probably in part manned by Iberian sailors. But this is a very different thing to a pre-Keltic Basque population, or to anything which can give a just title to the phrase, "our Iberian forefathers." We do not dispute the existence of a pre-Keltic, perhaps a non-Aryan, race in Gaul and the British Isles, but we contend that no sufficient evidence has yet been brought forward to prove that this race was the Basque. It *may* have been a cognate race, using the word loosely, as we may say that Teutonic, Keltic, Hellenic, and Latin races are cognate as included under the European branch of the Aryan race.

In the same wide sense, Basque or Iberian, Ligurian, Etruscan, and this unknown pre-Keltic race, may have been cognate races; but this is not proved, and the evidence utterly fails to

* Anno Christi, 684. "Tandem inter cetera genuinam B. Rictridis agressus est patriam, scilicet Vasconiam, ut illic et plures, et hanc sibi coelitus infuso, quo ardebat, irradiaret lumine stellam, reputans etiam ob illius gentis scovitiam se inibi posse martyrii palmam adipisci." "Vita S. Amandi" Acta Sanctorum, Tom. vi. 825, also the lives of SS. Adalbaldu, Rictridis, and Leo of Bayonne.

establish the existence of the Escualdun-, and Escuara-speaking race proper, far beyond the parallel of the Adour to the north, and Spain and its dependencies to the south. That the Basques were in Europe during the stone age, since several of the Basque names for cutting tools seem to be derived from a root signifying rock or stone, is also possible. The skulls found in caves in Bœtica and Spain generally, in connection with stone implements, may also possibly be Basque; but this is a district where the Kelt never drove out the Iberians. There is no evidence to connect the Basques with the megalithic monuments found in Keltic countries, and the absence of which is remarkable in the lands occupied by the purer Basques. We believe we have shown that the derivation of the dark and short men of western and central France from the Basques, who are fairer and taller, rests on hasty generalisation, and is not borne out even by statistics drawn from M. Broca's map. We have brought evidence to show that the Basques are on the whole fairer, and not darker, than the peoples around them, and it must be remembered that *all* these surrounding peoples are more or less mingled with Keltic blood. The only fairer race in contact with them is that of the Cagots, who were few in numbers, lived in isolation, never intermarried with the Basques, and of whose origin nothing certain is known. It is not asserted that the skull of the dark Kelt approximates nearer to that of the Basque than does the skull of other Kelt, but the contrary, as a mere prognathous opposed to a peculiarly orthognathous skull; nor do we see how the colour of the hair, eyes, and complexion, nor even with certainty the stature (for the relative height with regard to the size of the skull may differ in races, as it certainly does in individuals) can be deduced from the ancient skulls. We will close by quoting some words of M. Broca which his disciples seem too often to forget: "Soit que l'on considère comme primitif le type brachycéphale, aujourd'hui prédominant dans le Labourd, ou le type dolichocéphale—les notions anthropologiques que nous possédons sur la crâniologie basque sont jusqu'ici trop restreintes et ont été recueillies dans des localités trop peu nombreuses que les conséquences qui paraissent en découler puissent être considérées comme définitives" (pp. 54, 55). And, in conclusion, "Mais, je le répète, les faits qui ont servi de base à mon travail sont encore trop circonscrits pour se prêter à des conclusions positives, et le but que je me propose surtout en émettant ici cette conjecture est moins d'ébaucher une théorie que de provoquer de nouvelles recherches dans les parties du pays basque que j'ai explorées, et surtout dans celles qui n'ont pas été visitées encore par les Anthropologistes." These further researches have not

been made. The present writer has in the course of several years passed through most of the villages of the French Pays Basque—many of them, and those the most secluded, several times. He has handled, too, a considerable number of skulls in the Pays Basque,* and though making no pretence to scientific exactitude, has learnt to distinguish carefully the Basques from the Gascons, French, and Spaniards, who form so considerable a portion of the population of even the most remote towns of the Pays Basque. The evidence from anthropology alone does not seem sufficient to support the theory here combated, while the whole evidence of philology, history, civilisation, religion, and the physical characteristics of the present Basques, are against it.

DISCUSSION.

Professor BOYD DAWKINS stated, in reply, that he had listened with considerable astonishment and disappointment to the pungent remarks on the views of the northern range of the Iberian race held by Thurnam, Huxley, Draper, and himself, and published in outline in the *Fortnightly Review* (September, 1874, p. 320). He was astonished that the charge of "specialisation" should be urged against an essay in which the evidence of history, of the physical characters of the peoples in the area under dispute, and of researches into caves and tombs, was brought to bear on the general question; and he was disappointed that Mr. Webster had not added a single new fact to those which have been published several years ago by Broca, Thurnam, and Huxley,† in dealing with this most important and difficult problem.

Mr. Webster's criticism is based altogether on a misconception of the essay which he attacks. Had he paid attention to the first line in it he would have seen that the terms "Basque or Iberian" are applied to the non-Aryan race, proved by the historian to have possessed a large part of south-western Europe, and which probably spoke a language allied to the Basque or Euskarian. His remarks are directed against the view that the ancestors of the present speakers of the Basque language ever ranged far to the north, a view which is *not advanced* in the essay under discussion. They, therefore, do not apply to the subject-matter of that essay. Nay, further, when Mr. Webster states that in the Pays Basque, "everywhere, perhaps, the darker Basques are in the majority," that the Basque is probably a fragment of the Iberian race, and that an

* We make no use of our observations on these skulls (over one hundred), because, although many must have been Basque, and many were of the peculiar type, with the strong posterior base, narrow, well-formed forehead, and ortho-, or opisthognathous jaw, there was no external evidence whatever to prove that any given skull was Basque.

† Broca, "Bull. Soc. Anthropol.," ss. 1, i. p. 470—1, ii. p. 10; Thurnam, "Anthropological Memoirs," i. pp. 120, 459, *et seq.*, iii. p. 41; Huxley, in Laing and Huxley, "Prehistoric Remains of Caithness:" and "Critiques and Addresses," p. 167.

Iberian or cognate race may have spread northwards over Europe in the neolithic age, he is holding opinions identical with my own. It is unnecessary to examine the points raised as to the ethnology of the present inhabitants of the Pays Basque, as they have been carefully and critically treated by Broca, Thurnam, and others (see reference above), with the net result of establishing the fact that the speakers of Basque are divisible into a dark and a fair stock, and that the latter is probably of non-Iberien derivation.

The dark Bretons seem to me, as well as to Professor Huxley, to belong to the same stock as the Iberian of the Aquitania of Augustus, with whom they are conterminous, as may be seen from a comparison of my map* with that of Dr. Broca.†

With regard to the curious piece of history, that the fair-haired Visigoths, Franks, and English had been masters of Aquitaine from A.D. 409, I have to thank Mr. Webster for a correction. The date 409 is a misprint for 419. If he refers to Gibbons' "Decline and Fall" (chapter xxxi.) he will find evidence not merely of a Gothic invasion, but of a Gothic *settlement*; and, further, if he will compare Broca's map with the records of the invasion of Gaul by various hordes, he will see that the physique of the present inhabitants depends to a large degree on that of the invaders; in other words, that the present ethnology of France may be satisfactorily explained by an appeal to history.

To pass over all minor points, the question before us is whether there be sufficient evidence to prove the former range of the Iberian peoples as far north as Britain, and as far to the east as Belgium. The convergent testimony of history, ethnology, and of investigation into caves and tombs, is most decidedly in favour of such a view, in my opinion, and in that of many good judges. The objection to this view urged by Mr. Webster, that the Black Kelts‡ are not long-headed, is one of the more serious errors in his criticism; while that urged by the *Saturday Review*,§ that they may be of Finnish stock, is negated by the fact that the Finns are a tall, fair, broad-headed race. With regard to the latter, it is well to observe that the Finns *may* be represented among the fair Kelts, since both Thurnam and Huxley|| agree that there are no physical differences of importance to be noticed between them.

It remains now to examine the only remaining objection, which is based altogether on philological grounds, and which has found its most able advocate in the *Saturday Review*. "If," says the reviewer, confining his remarks to Britain, "the Silures and the small, swarthy Welsh of the present day are of Iberian stock, why are there no Iberian roots in Welsh? No one has shown that there is even an infusion of Basque in the Welsh language; no one has shown that there is any trace of Basque nomenclature in any

* "Cave-Hunting," p. 221.

† "Memoires d'Anthropologie," 1, i. p. 448, Carte 1.

‡ Laing and Huxley, *op. cit.* p. 127.

§ *Sat. Rev.*, 2nd Sept., 1874, 'Mr. Dawkins on the Basques.'

|| Laing and Huxley, *op. cit.* p. 116.

distinct part of Britain. A Keltic settlement in such an age among a Basque people must have led to the extermination or expulsion of the Basque inhabitants. That they should have turned into Kelts, without leaving any trace in the language, or even the nomenclature of the country, is a thing which, in our point of view, seems altogether unparalleled."

Now, to pass over the hypothesis that settlement of Keltic among Iberian tribes "must" either imply extermination or expulsion of the latter, which seems to me incapable of proof, it is assumed that there is *no* trace of Basque or cognate Basque speech in the Keltic tongues. Is this so? It would be presumption in me to attempt to give an answer to this most difficult question; the *onus probandi* rests not with me, but with the philologists. I would, however, ask whether they have proved that there are *no* traces of a non-Aryan tongue in the Keltic languages? For many years I have been attempting to obtain evidence on the point, without success, until my book was published in the autumn. It seemed to me that the Keltic languages had not been analysed by any competent authority, with a view to the discovery of non-Aryan traces, and I therefore did not discuss "the philological difficulties, which" the Saturday Reviewer (Nov. 14th, 1874) says, rightly, "I failed to appreciate." May I now ask the distinguished philologists at this meeting what philology has to say to this question?

I would also further ask, Is language a test of race? The Saturday Reviewer admits "that it is certain that many nations have changed their language without any change in themselves." And if this principle be admitted to be true, the assumed absence of Basque words in the Keltic tongues does not present any difficulty to the views held by Huxley, Thurnam, and myself. The question, in that case, narrows itself to the simple issue whether it be easier for the Ethiopian to change his skin and all his other physical characteristics, or to change his language. He would be an enthusiastic believer in the immutability of words who could maintain the latter alternative. I hold, therefore, that even if there be no traces of Basque in Welsh, that fact does not affect the further point as to whether the small, dark, swarthy Welshman is descended from that or an allied branch of the non-Aryan inhabitants of Europe. It seems to me that Mr. Webster has not contributed anything to the solution of the problem before us; a problem which is equally important to the ethnologist and the historian.

Prince L. LUCIEN BONAPARTE said: Mr. Webster's discourse offers scarcely any point in which I cannot cordially concur, especially when speaking of the high competency of William von Humboldt in respect to the Basque language and ethnology. It is, in fact, impossible to dispute the superiority of that eminent philologist, on this special question, over every modern writer not by birth a Basque. The idea on which I insist the most is, first, that as it would be presumptuous to affirm that language is always a test of race, so it would be at least as hazardous to declare that anthropologists should invariably dispense with such test. We cannot, in

fact, deny that the modern Cornishman, though Kelt, speaks English; that the Shetlander and the Orcadian Scandinavian speak Scotch; that a large proportion of Livonians, though of non-Aryan, Ouralic race, speak only the Aryan, Lettonian, and so on. Secondly, that, nevertheless, these are merely exceptional cases, fortunately easy to be explained by modern history. Exceptions prove the rule, and I willingly admit that the exceptions are numerous. But are they sufficiently numerous to destroy the rule? Certainly not. For it is self-evident that the inhabitants of France and Spain who speak Basque, that those of the British Isles and of France who speak Keltic, that those of Livonia who have preserved the Ouralic tongue, &c., &c., preserve, even by the avowal of anthropologists, the anthropological character which the language has beforehand indicated. In a word, if an unimportant minority of philologists pretend to dominate as despots over the anthropological science, they are wrong. But the minority of anthropologists who maintain that language should never be considered in the determination of race are still more in error.

Dr. BEDDOE communicated the following note:—I am anxious to have an opportunity of saying that, if I rightly apprehend the nature of the views held by Mr. Dawkins and by the author of the paper, they are not incapable of being harmonised. With respect to the northern limit of the Basques, or rather of the Euskarian races, the investigations of Broca and his collaborators, summed up in a masterly paper just published in the *Revue d'Anthropologie*, prove the existence of a distinct ethnic frontier near St. Jean-de-Luz, to the south of which prevails the comparatively pure Basque type, characterised by occipital dolichocephaly and extreme orthognathism; but to the north a somewhat brachycephalic and even slightly prognathous type, which abounds through a great part of the south of France, and is called Keltic by Broca and by most French anthropologists.

On the other hand it must be allowed that good observers, such as Mr. Dawkins, find a certain degree of resemblance between the true Spanish Basques and the modern Aquitanians, not only those to the south-west of the Garonne, but even those beyond that river, and some extend the supposed likeness to the Bretons. Furthermore, a type not unlike the Basque is found in the country of the old Silures, whom Tacitus believed to resemble the Iberians. The generally accredited resemblance between the Spaniards and the western Irish cannot be quoted here with any confidence, for the Spaniards are a heterogeneous people, and the Irish-like element among them may not be Basque; still, there are many other reasons for suspecting an Iberian element among the Irish. Again, Dr. Mitchell calls one of his Highland-Gaelic types "the Spanish Kelt," and his description of this type agrees pretty well with the Basque one; and Hector Maclean finds some apparently Euskarian words in the Gaelic of the West Highlands. And, to return to the south of France, the skulls from the cavern of the Homme Morte, in the mountains of the Lozère, where the modern

population is short-headed, are extremely long; and a single glance at them, as figured by Broca, immediately directed my thoughts to the Basque type, to which I afterwards found that they had been likened by my illustrious friend. I need not now enter on the questions connected with the ancient British long heads and Thurnam's ideas respecting them.

On the whole, there is a great deal of evidence in support of a hypothesis analogous to that of Retzius, yet widely different—the hypothesis of a dolichocephalic race, Euskarian, though not necessarily Basque in the narrower sense, which may have overspread Western Europe, from Cape Wrath to Gibraltar, and North-western Africa besides, before the arrival of any race which anybody would now recognise as Keltic.

The considerable proportion of brown or lightish hair, said to occur among the Spanish Basques, need present no difficulty, even to those who believe in the permanence of hair colour as a race-character. The same colours occurred in the Roman period among the supposed Iberians of the south of Spain: they have been recognised among the inhabitants of Northern Africa for more than 3,000 years, and among the Guanches since their discovery. The greater predominance of dark hues among the modern Gascons seems to indicate that the principal race which has crossed the aboriginal Euskarian people must have been extremely dark. This I believe to have been the Ligurian stock, which occupies on the map of Europe a large area, conterminous with that of the brachycephali of Central Europe, with whom, however, I do not at present incline to think they are in any other way related.

Professor BUSK agreed with Dr. Broca in his determination of a dolichocephalic type of skull among the inhabitants of Guipuzcoa, and that it is typically Basque. Twenty-one per cent. of the French Basque-speaking people are brachycephalic. He remarked on the close similarity, almost identity, of the Basque area, as depicted by Prince Lucien Bonaparte in his maps, and by Dr. Broca in his memoir, determined, as it would seem, upon totally independent data.

Mr. HYDE CLARKE considered that Mr. Dawkins was justified in the main in the position he had taken up; at the same time it was impossible to concur with him in his neglect of the philological considerations. No anthropological investigation could be complete which excluded philology. The Basque language is in itself a great anthropological fact. Dr. Webster greatly relied upon W. von Humboldt's investigations, and these are to be regarded with attention, for there is nothing more valuable and more certain than the study of the names of places, as a branch of philology and history, when properly applied. In the then state of knowledge, Von Humboldt had been induced to extend the Basque area too far, and to include in it the Iberian. It is here that we have to seek the true solution. The Iberians must have been a civilised people later than the Basques, and cognate (as he had stated in his paper in the *Journal*, vol. iv. p. 148 *et seq.*) with the Sumerians in Italy, Greece,

the East, and throughout the world. The Kelt-Iberian inscriptions are in favour of this, and deserve careful study. The diversity of populations in the Basque and the allied countries was because they included not only a Basque element but an Iberian element, and this has to be accounted for. Indeed, it is futile, in the thousands of years to be allowed for, to suppose that one race alone existed; nor does the distribution of skulls as dolichocephalic and brachycephalic suffice for the ethnological phenomena. If Mr. Dawkins had profited by the philological evidence, and particularly by that offered by him (Mr. Clarke), it would have strengthened his position. The Basque language was undoubtedly allied with those of dark populations in Africa and India; with the Houssa, Mandingo, and Fanti, &c., of West Africa; with the Kolarian, Sonthal, &c., of Central India, at an epoch when, as language showed, the populations were leaving caves (wherein Mr. Dawkins sought their remains) and establishing themselves in tree-abodes and houses, and were passing from an age of stone to one of bone and wood. With regard to the so-called Turanian influence, which had been detected in Irish and in Erse, he doubted that this could be called Basque, as it was much more likely to be Sumerian; and for this a comparison with Accad is desirable, and also an investigation into the names of places in the western Keltic countries. As to the phenomenon of vocalic euphony, that is not peculiarly Aryan, but is found much more widely distributed than is supposed, and is an early fact in prehistoric philology. With regard to Dr. Webster's denunciation of specialisation, it is impossible to concur in it, because, in the present state of anthropology, no one man can of himself apply all the requisite modes of investigation. Nothing is more common for naturalists of the highest scientific standing to profess an utter ignorance of philology, for instance, and to give proofs of such ignorance. The world is, therefore, under great obligations to those who, like Mr. Boyd Dawkins, Prince Bonaparte, Professor Huxley, Mr. Busk, and Colonel Lane Fox, each bring special knowledge and a distinct system of inquiry to bear, assisting one another and contributing to the general labour.

The Rev. A. H. SAYCE said: Not only do I fully agree with Prince Lucien Bonaparte, that the philologist who makes language the test of race is a bold man, but I would go further and say that language cannot be the test of race at all, but only of social contact. We cannot argue from the exceptional phenomena of the stereotyped families of Aryan, Semitic, and Turanian speech. Savage and barbarous dialects are in a constant state of flux and change; while conquest, migration, and other causes, occasion the borrowing of new languages and the loss of old ones. Passing on to the paper just read, it seems to me that Mr. Webster and Mr. Boyd Dawkins are really substantially in agreement, and that the apparent difference between them results from a misunderstanding, Mr. Webster having interpreted in a narrow sense the term Basque, which Mr. Boyd Dawkins used as equivalent to Iberian. Mr. Webster allows that the Basques belong to a "Turanian" population once spread over

the west of Europe, and speaking an agglutinative language, and this is precisely what Mr. Boyd Dawkins asserts. The Basques, physically and linguistically, are the representatives of a race which preceded the Kelts, and were driven by them into the mountain fastnesses of the extreme West, just as the Finns were by other Aryan tribes in the North. Just as the existence of light-haired persons among the Basques shows only that mixture of blood which was to be expected, so, from the present state of the Basque language, we cannot draw any conclusion against the view that the primitive population with whom the Aryan Kelts came into contact spoke older but cognate dialects. The oldest Basque with which we are acquainted does not date back beyond three or four centuries; before that time there was no literature, and the changes undergone by languages other than literary are astonishingly rapid and extensive. The few native inscriptions of early date found in northern Spain, so far as they can be deciphered, show little resemblance to modern Basque, while Strabo (iii. p. 139) states, that not only had the Iberians many different dialects, but several different alphabets as well. This points to want of intercourse, bringing with it a great diversity of language. Numerous as these languages were, however, they must have had a general resemblance to one another, since Strabo (Book iv.) says that they were like the idioms of Aquitania, in contradistinction to those of Keltic Gaul. The modern French Basque dialects are not descended from any of those of Aquitania, since their speakers first entered France after the fall of the Roman empire, but they would be later descendants of some cognate dialect or dialects. Basque is the sole survivor of what may be called the Iberian family of speech, which was displaced by the Keltic invaders. It is useless to seek for traces of Basque words in local names, whether in France or elsewhere. Basque is too modern to allow us to know the forms of its words even a thousand years ago, while nothing is so soon corrupted as a proper name. Humboldt's attempt to explain local names in Western Europe by means of modern Basque is necessarily a failure. Until the Keltic vocabulary has been thoroughly examined, and its non-Aryan residuum made out, it is impossible to compare it with those Basque roots which have been extracted from a comparison of the Basque dialects. Grammar and idioms alone can inform us whether the Keltic languages have come under the influence of their Iberian predecessors. If non-Aryan forms and idioms can be pointed out in Keltic similar to those found in modern Basque, philology will have done all it can to support the theory that the population found by the Kelts in Western Europe was one of which the Basques, physically and linguistically, are the best modern representatives.

Mr. J. RHYS spoke as follows: The evidence of language on the question before the meeting is very precarious, owing partly to the difficult position of Basque philology, the oldest manuscript specimens of Basque being, as I am told, only two or three centuries old. A comparison of the vocabulary of Basque with the vocabularies of

the Keltic languages would not be of much use, especially if those languages are taken in their modern form. Now, we have Irish and Welsh of the eighth century, without taking into account the data supplied us by inscriptions dating two or three centuries earlier; and if Basque scholars, by a careful examination of the Basque dialects, can infer the rules of phonology which have obtained in them, and thereby restore, as it were, the parent speech from which they have branched, that parent speech might be advantageously compared with Old Irish and Old Welsh. Until that can be done it avails little to appeal to philology against Mr. Boyd Dawkins' theory, and supposing it done, the result would not, perhaps, be so completely hostile to his theory as Mr. Webster seems to think. As matters now stand, I fail to discover many points of similarity between Basque and Keltic, of such a kind as would suggest that the Keltic nations had at any time absorbed Basque ones. The only one I happen to recollect is the incorporating nature of the verb in Basque, Old Irish, and, to a slight extent, in Old Welsh. For my part, however, I look with more confidence for the explanation of the non-Aryan traits of the Keltic tongues in another direction, namely, to the family of languages represented by those spoken by Finns and Hungarians at the present day. Thus I would, with the utmost diffidence, suggest that the pre-Keltic inhabitants of those islands formed the missing link between the Basques of France and the Finnish nations of the Baltic.

Mr. W. J. VAN EYS said that Humboldt's theory on the origin of the Basques, and of their language, has been so much opposed of late that it does not appear sufficient to quote his name as an authority. If I am not mistaken, the Rev. Mr. Wentworth Webster, in his paper quotes the eminent German philologist, without giving any reason why he thinks that Humboldt is right in his assertion that the modern Basques and the ancient Iberians are one people and spoke one language. But not long ago the Rev. Mr. Webster treated the same subject in the *Academy*, No. 134, and there he tried to explain that the opposition to Humboldt's theory arose from not observing the difference of the conditions of two very different problems—the first: What is the original language of certain names in Spain which we find in a Greek and Latin dress? the other: What is the language of the so-called Iberian inscriptions? This, most probably, was still the Rev. Mr. Webster's opinion when he mentioned Humboldt's name in his paper just now alluded to. Mr. Webster mixes his theory with that of Humboldt, and produces some confusion. The second problem stated by the Rev. Mr. Webster has not been touched by Humboldt. He expressly says that he will not try to explain the so-called Iberian inscriptions. The first problem only is the subject of Humboldt's essay, with this difference, that the Greek and Latin dress in which some Basque names may appear is a suggestion of the Rev. Mr. Webster—a valuable suggestion, perhaps, but it belongs to Mr. Webster and not to Humboldt. That the latter is aware of the influence of Greek and Latin in the tran-

scription of Iberian names is a matter of course (see Prufung, p. 5); but, as a rule, his etymological explanations are based on what he thinks to be the phonetic system of the Basque language. As it has now been possible to prove, by a better acquaintance with the Basque language, that Humboldt's attempt has completely failed, the results obtained by him have not the value which has generally been supposed they have. If ever it will be proved that the Basque language is derived from the Iberian, it will have to be done by quite different arguments than those of Humboldt. The opposition to his theory arises from the discovery that he did not possess sufficient knowledge of the language. I do not wish to criticise the Rev. Mr. Webster's remarks for my own sake, but for the right understanding of Humboldt. The question, as he puts it, is a purely philological question, which has to be decided by philological arguments. Humboldt's language is very clear; and in order not to leave any doubt as to what he meant, I might quote some of his conclusions. On page 120 we read—"The ancient Iberians are undoubtedly Basques." On page 177—"The comparison of the ancient local names in the Iberian peninsula with the Basque language proves that this (Basque language) was the language of the Iberians." On the same page—"The terms of Iberian peoples and Basque-speaking peoples have the same value." On page 22—"What has been said in the preceding paragraphs will be sufficient to demonstrate that the formation of the ancient local Iberian names is generally concordant with the Basque phonetic system." It is, consequently, not quite correct, when Humboldt pretends that *ulia* is the same word as Basque *ura* (water), to explain this as if Humboldt had meant to say that *ura* appears in its Latin dress as *ulia*. If Humboldt had wished to say so, he certainly would have done it. No more is the Rev. Mr. Webster's conclusion correct when he says—"So that Humboldt was fully warranted in considering the many names of streams beginning with *ur* as *prima facie* Basque." No one, I think, will dispute that *ur* is *ur*, but it is disputed that *ulia* is *ur*.

Professor HUGHES thought that the case before them was very similar to one which often occurred in geology, where two beds had to be correlated, one of which contained fossils, and the other contained none. It can be shown that they are on the same horizon by other than paleontological evidence, and then the fossiliferous bed enables us to make out what that horizon is. So it seemed to him that Professor Dawkins had given reasons other than philological for identifying an ancient race which formerly occupied a large part of S.W. Europe with the Basques. Of course, in the case of the extinct, or, rather, absorbed race, there could be no language to compare with that of the Basques, except, perhaps, a few words and idioms, like derivative fossils in a new bed. The existence of a large Turanian element in the Basque language was allowed. The occurrence of two types, the melanochoic and xanthochoic, among the Basque-speaking population was not questioned; but Professor Dawkins pointed out

reasons for believing that the xanthochroic were the newer part, who had been absorbed by the stronger people among whom they had arrived. Having, then, shown that the remains of the earlier neolithic people prove that they resembled the Basques in their physical characters, having pointed out which type of Basques is likely to represent the original stock, Professor Dawkins goes on to explain, from an examination of the remains found, and of the physical characters which have been transmitted to the populations of S.W. Europe, what was the northern range of the earlier neolithic people, whose nearest representatives he has given reasons for believing are now seen in the dark type of Basques.

The PRESIDENT thought that the Institute was much indebted to Mr. Webster for his interesting paper, and to Mr. Boyd Dawkins for his remarks in reply. It was difficult to say which had made the most of the scanty data at their disposal. He thought the meeting would at once perceive that what was really wanted, in order to throw light on this subject, was more complete and careful statistics as to the form, colour, stature, and psychological peculiarities of the Basques, conducted upon the principles laid down in the "Anthropological Notes and Queries for Travellers," lately published under the direction of a committee of the British Association. He did not think we should ever obtain really satisfactory statistics upon the population of civilised countries until they were conducted under the auspices of the governments of those countries. Under government authority, really valuable returns might be obtained, without imposing any great burden upon the people; and he hoped the time might come when anthropological societies would be in a position to urge upon their respective governments the importance of aiding them in these and similar inquiries. He would not, at that late hour of the evening, and after having heard the opinions of so many distinguished philologists, detain the meeting with any remarks of his own upon a subject which he had not made his special study; but he would ask them, in addition to the thanks which they had already accorded to the authors of the evening's discussion, to make their especial acknowledgments to Prince Lucien Bonaparte, who was recognised as the best living authority upon the Basque language, and who had come there to give the Institution the benefit of his remarks upon this most interesting inquiry. To him the Institution is also indebted for the two admirable maps, showing the distribution of the eight dialects of the Basque language, which hang upon the walls.

The AUTHOR was not present to take part in the discussion.

Dr. J. Simms and Mr. Charlesworth having offered a few remarks, the meeting separated.

FEBRUARY 23RD, 1875.

Colonel A. LANE FOX, *President, in the Chair.*

The minutes of the last meeting were read and confirmed.

The following new members were announced, viz.:—EDWIN LYNN, Esq., Assist. Sup. Kamun Coal Fields, Hydrabad, Deccan; J. SIMMS, Esq., M.D., 337, Strand; CHARLES H. READ, Esq., 103, Victoria Street, S.W.; and WILLIAM HENRY HORNBY STEER, Esq., Apsley House, Whitechurch, Monmouth.

Mr. R. B. HOLT exhibited models of canoes, winter and summer huts, sleighs, caiques, and figures of Esquimaux, all of native manufacture.

Captain HAROLD DILLON exhibited a series of flint implements, &c., found in the neighbourhood of Ditchley, Oxon, and described them in the following note:—

On FLINT IMPLEMENTS, &c., found in the neighbourhood of DITCHLEY, OXON. October, 1874, to February, 1875. By Captain HAROLD DILLON.

THE flints exhibited were found in the parishes of Spelsbury, Stonesfield, and Kiddington, county Oxon. It will be seen, on referring to the 45th sheet, Ordnance Map, that two water-courses or streams fall into the Glyme river about one mile west of Wooton. One of these comes from Lidstone, Enstone, Kiddington, Glympton, and the north.

The other, which comes from the west, rises near Bottom Wood, and is largely fed by a spring formerly known as Spurnill's, or Spurling's Well, situate one mile due south of Ditchley House. Thence it passes, at the foot of Devil Pool Hill, through what was Devil's Pool (now dry), and so on, with high ground on each side.* At the foot of King's Wood (now cleared) was formerly situate Boxden Lake, the south boundary of Enstone parish, here separated by it from Stonesfield parish. The stream passes through the site of Boxden Lake (now dry), and thence along the foot of the hill on which is situate the Roman villa of Callow Hill, and so by Glympton Assarts to Slape Bridge, where it joins the Glyme. The north bank of Boxden Lake is now woodland, but the south bank, shown as King's Wood, was cleared some thirty years ago. The surface of King's Wood is fairly scattered over with flint chips and implements. Quite one-half of the arrow-heads shown (44 in number) were found on this place.

* Boxden Lake and Devil Pool appear on a map of 1726. Boxe Wood mentioned 1800. See vol. xxxvii. *Archæa*.

To the north of the stream will be seen Out Wood. A large portion of this has been grubbed within thirty years, and on the cleared portion, and also on the ground between that and the stream, many flints were found. Large portions of the land on the north side of the stream are now covered with wood, and could not be examined in consequence.

The high ground on both sides of the stream, and particularly that on the south bank, possesses advantages which must have led to its occupation by the flint-using people. A high ground, with easy access to, and the command of the water, was an advantage which would be appreciated by the Romans in the location of the villa on Callow Hill, as it had been by the flint-using inhabitants of the locality now called King's Wood. Here on Callow Hill, as in Colonel Lane Fox's discovery* of Roman remains on Devil Pool Hill on the north bank, and also near Bottom Wood on the south bank, flints have been found in the immediate neighbourhood, and, indeed, sometimes mixed with fragments of Roman tile.†

The existence of large woods in this neighbourhood limits the examination of the ground; but the new survey which will be completed in two or three years will, it is hoped, bring some new features of the ground to notice. Captain Ferrier, R.E., who is in charge of the survey party in these parts, takes an interest in archæology, and is secretary of the Oxford Architectural and Historical Association.

One of the most important features of this neighbourhood is doubtless Gryme's Dyke, not only from itself, but from the apparent relation it bears to the presence of flints. This dyke, which has been described by Plot, Stukeley, Warton, Jordan, and others, with various opinions as to its origin and use, is shown in part on the Ordnance Map. It starts from near Ramsden, and, passing through Cornbury Park, by Charlbury, and so on past the north side of Ditchley Park, soon after enters Out Wood, and curves round toward *Woodleys*. Thence it passes into Blenheim Park and falls into Akeman Street, near North Lodge. Ditchley is supposed to derive its name from this dyke, within which it is situate.

Now, having examined a large portion of the land outside of this dyke, as well as all the land between it and the stream before referred to, I found that flint chips, &c., only existed in any quantity on the inside of the dyke. Outside the dyke the flints ceased at once, and often none at all were found for a mile

* See "Jour. Ethno. Soc.," vol. i. p. 1 *et seq.*

† On this site, near Bottom Wood, are three tumuli which do not appear to have been yet examined. There is a story of a stone coffin having been found here, but the spot is not now known where it was re-interred.

or more. Of course near tumuli and megalithic monuments a few have been found, but very few. In fact, with the exception of a scraper I found at Lidstone, I may say I found no implements outside. Colonel Lane Fox mentioned, in the paper referred to, that all the flint found here must have been brought from at least nineteen miles to the south, this being an oolitic sandstone district. During the ninety days or so that I was examining this part of the country, I picked up every fragment I saw, and the whole would not fill a bushel basket.

Of course the fact of *not* finding flints outside is but weak evidence against their existence; but if such should prove to be the case for some years after regular cultivation, it would, I think, be *some* evidence toward considering the dyke as in some way connected with the former occupation of these parts. That it was not a road is clear; and the care shown in keeping the command of the outside country (at least in most places) points to its having been a defensive work for some settlements on the inside of its curve.

As evidences of a continuous occupation of the ground on both sides of Boxden Lake, I may mention that I found, within a short distance of each other, flints, Roman tile, a piece of bronze, a penny of Ethelred, and an early 17th century clay pipe. This ground, however, had wood on it till within about thirty years, though it would be difficult to prove that it had been wooded since the mention of Edward the First's perambulation of Wychwood Forest, at which time it must have been nearly in the centre of that forest.

I examined carefully several watercourses in the neighbourhood, both within and without the dyke, *e.g.* one from Fulwell to Radford; one from Lee's Rest to Fawler; one from Shire Wood to Stonesfield; one from Ditchley to Kiddingington, &c; but I found no flints to speak of on the banks of any of these. Near the Roman camp at Knollbury I found a few flakes, and others near Taston. Cores, flakes (none exceeding $3\frac{1}{2}$ inches long), and chips were found with the scrapers and arrow-heads; but the only pieces bearing marks of grinding were the chisel and two pieces of broken celts, one of which has been used as a hammer.

DISCUSSION.

The PRESIDENT said that Captain Dillon's paper, though short, represents a large amount of time and attention devoted to the investigation of the particular question which arises from the relics discovered in this locality, and it is important, because accurate in its results. He has devoted ninety good days' work to the subject, and having walked with him two or three times over portions of the ground, I know how indefatigably he has followed the matter

up. Seven years ago, in a paper which was published in vol. i., new series, of the "Journal of the Ethnological Society," I drew attention to the existence of a flint-folk settlement in this spot, in association with Roman remains on the same sites. The interest of the locality, as Mr. Dillon has said, is increased by the fact of its being in the oolite country, nineteen miles from the nearest flint deposits, and the distribution of the relics of the flint-workers can, therefore, be traced with far greater clearness than in a country where flint is common in the soil. Every atom of flint found here must have been imported by the hand of man. The flints which I then found, some of which are figured in the "Ethnological Journal," were found within the area enclosed by the dyke, but my examination of the country did not go far enough to determine whether they were confined to the dyke enclosure, or distributed equally over the surface in the surrounding neighbourhood. I was led to conjecture that, although dykes in general in this country are certainly not Roman, this particular dyke might have been of Roman construction, because it covers and defends, from the north, the sites of at least three Roman structures, including one fragment of a mosaic pavement, within the space of a mile. Akeman Street runs in an east and west line from Asthal to Bicester; the Roman sites are close to the north of this Roman road, and the dyke covers the north side of them, running in a good defensive position, somewhat in the form of the arc of a bow, and having Akeman Street more or less in the position of the string of such a bow. The light which Mr. Dillon has thrown upon the question consists in having carefully examined nearly every yard of ground within the area coloured upon the map, which extends for some miles to the outside of the dyke, and by that means he has ascertained that the flints are confined chiefly, if not exclusively, to the area defended by it. We have, therefore, two propositions to consider,—either that this area was occupied in the stone age by a settlement of prehistoric Britons, and subsequently the same sites were occupied by the Romans; or else some of the British tribes employed by the Romans may still have used stone implements. With respect to the dyke itself, it may be of either period; but the fact of its serving to defend the area of the Roman structure, and their communications with Akeman Street, from any incursion of barbarians from the north, seems to imply that it is Roman. The truth can only be ascertained by excavations in the ditch of the work. If flint implements were to be found on the original bottom of the ditch, they would, in this soil, suffice to determine the period. The President concluded by saying that he had himself excavated a few feet of the ditch near Ditchley Park, and found a single flint-chip near the bottom, but this was not enough to build any theory upon.

Sir DUNCAN GIBB remarked that the flint implements exhibited were much smaller in general dimensions than those usually found in England; this applied more especially to the arrow-heads, which, though very perfect, were not one-half, or even one-third, of the general size.

Mr. Brabrook read the following paper for the author :

On the MILANOWS of BORNEO. By Lieut. DE CRESPIGNY.

A FEW remarks upon the Milanows, or Malanaus, may not be unacceptable to the Institute, as I do not remember to have read in any book published on Borneo, anything more than a mere allusion to them, and as they are an interesting people, with a tendency to increase in number, it may not be out of place to tell you what I know of them.

They are, then, a tribe who inhabit the low countries between Bruni and Tanjong Agri. They seem to have a common language, which is, however, much diversified in different rivers, causing the dialect of one place to be difficult to be understood by a man coming from a more distant one.

As to their origin, I am inclined to think, from the similarity of religion, that they may claim descent from the same ancestors who were the progenitors of the inhabitants of Timor and the Moluccas, and, I think, also the Kyans, who certainly entered this country from the east, may claim clanship with them. I should not consider either the Kyans or Malanaus entitled to be called aborigines of the country, nor the Dayaks, who seem to have come from the south and south-east, and to have gradually worked their way up the great rivers, pushing the aborigines before them.

The Malanaus are an industrious and well-to-do people. They are rich in sago plantations, and they are also expert and bold fishermen. They are not a handsome race, whatever may have been said to the contrary, both sexes being ill-formed, as a rule; the women especially so, being short and squat, and, long before middle age, becoming very obese. They are litigious, and they have less regard for truth than their neighbours the Malays and the Dayaks. But they are good-natured and hospitable; the men avoid ostentation, and very seldom array themselves in rich costume, but like to see their women wear gold ornaments and clothes of fine stuff fringed with valuable beads. In old times these people must have had a very precarious, and, for the most part, a very short existence. Harassed on land by the Dayaks, and at sea by the Lanuns, they lived in constant fear of their lives, whether in their plantations or fishing boats. Moreover, their rulers, the Malays of Bruni, as may be supposed, did not live upon them for nothing; and to find a family who were altogether freemen was almost impossible, grown-up people being taken into slavery from inability to pay fines, and children from inability of their parents to pay debts. However, things are different now, and I believe it is really the case that the population of this district of Mukat has doubled itself within the

last ten years, which is about the time the country has been under Sarawak rule.

I must now say something about their religion. They believe in another world, which is like this, having rivers, seas, mountains, and sago plantations. There is one Supreme Deity named "Ipu." There is a beautiful female spirit named "Balu Adad," who conducts departed souls to their future abode, but not until the three or four days' feasting and cock-fighting is over and the corpse has been conveyed to its resting-place. The narrow road leading to Elysium is guarded by a ferocious double-headed dog, named "Mawiang," to whom it is necessary to present a valuable bead. This bead is always carefully fastened to the right arm of a corpse, with whom are buried gold ornaments, weapons, gongs, and rich clothes for use in the other world, and at whose tomb it was formerly the practice to bind a slave, or sometimes as many as ten slaves, who were left thus miserably to die, that their spirits might wait upon their master. All people who had met with a violent death, except those just alluded to, had their paradise in a different place from that which constituted the abode of those dying naturally, a country further back. The Malanaus believe that, after a long life in the next world, they again die, but afterwards live as worms or caterpillars in the forest.

There are several spirits who haunt the woods and streams; they are malignant, and afflict mankind with various diseases. Tow, Dalong, Doig, and Balanyan, are spirits of the woods; Gin, of the sea; Naga, of the rivers. Deog Ian, the spirit who afflicts with dropsy, lives at the sources of rivers. Iblalangan Langit is a winged spirit, inhabits the sky, and kills with thunder and lightning. Siag and Abong send fever and ague upon mankind. There are various ways of propitiating these spirits; by hanging festoons of plants before the house; by making fictitious prahus of sago-pith, and either setting them up at the mouths of rivers or letting them float out to sea; by calling in sorcerers to swing in the house all night to the sound of all kinds of gongs, while feasting is kept up the whole night, and the sick person carried down in a boat next morning to smell the sea air; by making images of the spirit, and paying the sorcerer to abuse the image. With all this the people cannot be called superstitious, for they only seem to perform these rites as a matter of custom, never assuming any air of religion nor making any prostration, nor uttering any prayers to the spirits while performing them, but evidently hoping the sick person will be satisfied that nothing is left undone which should be done under the circumstances. You will see by the above lines, that although in the generality of cases, as regards semi-barbarous people, there is a nauseous

similarity in accounts of their habits and cultus. There are points in those of the people under description of sufficient originality to induce me to hope that the account of them will prove interesting. There do not appear to be any religious services performed except as above—intercession for the sick. But taboo on various occasions is exercised; and, like other people of the country, the Malanaus have their omens.

As dialects of the inhabitants of North Borneo seemed acceptable, I indite one of the Malanau language, as spoken in the district of Mukat.

ENGLISH.	MALANAU.	ENGLISH.	MALANAU.
Ant	Ngad	Hard	Sahih
Ashes	Abau	Head	Ulau
Bad	Jaat	Honey	Ayer madu
Banana	Badak	Hot	Laso
Belly	Nga-ai	House	Lebo
Bird	Manuk	Iron	Besi
Black	Bilam	Island	Pulau
Blood	Dah	Knife	Uji
Blue	Biruk	Large	Mat
Boat	Saloi	Leaf	Dann
Body	Bia	Little	Umit
Bone	Tulang	Louse	Kutu
Bow	Panah	Man	Alai
Box	Kaban	Mankind	Tenawan
Butterfly	Balabang	Mat	Pan
Cat	Sieng	Monkey	Kuyad
Child	Anak	Moon	Bulan
Chopper	Parang	Musquito	Kias
Coccanut	Beniu	Mother	Tina
Cold	Singoa	Mouth	Moba
Come	Kidigau	Nail (finger)	Silu
Day	Lau	do. (iron)	Paku
Deer	Payau	Night	Lamai
Dog	Aso	Nose	
Door	Banawang	Oil	Nio
Ear	Linga	Pig	Babui
Egg	Teloh	Post	Di
Eye	Mata	Prawn	Undang
Face	Jauei	Rain	Ujair
Father	Tamua	Rat	Labau
Feather	Bulan	Red	Sak
Finger	Tujuk	Rice, in husk	Padai
Fire	Apoi	Rice, raw	Bras
Fish	Jikan	Rice, boiled	Nasi
Flesh	Sei bia	River	Lungei
Flower	Bunga	Road	Jalan
Fly	Lalangow	Root	Akar
To fly	Tiling	Saliva	Liang
Foot	Pajag	Salt	Liar
Fowl	Siau	Sea	Alud
Fruit	Bua	Silver	Pirak
Go	Taboi	Skin	Kulit
Gold	Mat	Smoke	Tugan
Good	Diak	Snake	Dipa
Hair	Buh	Soft	Lamak
Hand	Paa	Sour	m'sam

ENGLISH.	MALANAU.	ENGLISH.	MALANAU.
Spear ...	... Besei	There... ..	... gagien
Star ...	... Bintang	What... ..	... Ino
Sun ...	... Mata lau	That ...	... Ino
Sweet... ..	... Tami	Many ...	... Ida
Tongue ...	... J'lah	When... ..	... Peia
Tooth... ..	... Ipan	Who ...	... Lei
Water ...	... Niám	Where ...	... gagahan
Wax ...	... Lilin	To throw away	... jiwiek
White ...	... Apo	To walk ...	... makau
Wife ...	... Saua	To die ...	... matai
Wing ...	... Payang	To sit ...	... kuduk
Woman ...	... Mahau	To stand up ...	... B'kadang
Wood... ..	... Kayu	Betel nut ...	... pinang
Yellow ...	... Kuning	Sirih ...	... s'pah
Green... ..	... ijau	To want ...	... Lo
Yes ...	... eh	A little ...	... sijumi
No ...	... uda	To make ...	... sibat
Seek ...	... piniang	To bring ...	... gé
Find ...	... k'nah	To take ...	... gé
Like this ...	... gatanien	Presently ...	... né
Like that ...	... gatanien	Not at all ...	... aké
Formerly ...	... Tai	Goods ...	... barang
If ...	... Kalau	Arrive at ...	... Tapa
To sail ...	... Padu	Now ...	... Ajaú itau
To run ...	... Pabia	To carry ...	... S'un
Ghost... ..	... Amo	To drink ...	... Tutang
Corpse ...	... Bukang	Daylight ...	... Lau
To mix ...	... champur	To cook ...	... Misak
Naughty ...	... gauk	To warm at fire	... Pidau
Angry... ..	... m'dalu	To eat ...	... kaman
Tray ...	... dulang	Perhaps ...	... barangkali
Winnowing sieve	... niru	Don't... ..	... Ka'
Sieve ...	... ayak	To forget ...	... Leilu
To pull an oar	... pla	To remember	... Singad
Blind... ..	... mapak	To-morrow ...	... Sumi
To break ...	... baba	Day after ...	... Sili suni
To lie... ..	... pamudei	Yesterday ...	... mabei
To sleep ...	... tudui	Day before ...	... sili mabei
To lie down ...	... p'galang	Boundary ...	... niatan
To get up ...	... p'kadang	News ...	... Dangar
To awake ...	... ban	Up river ...	... Kamanuju
Bottle... ..	... botul	Down river ...	... Kalud
Tin and lead ...	... timah	Not yet ...	... Madanga
To meet ...	... tamu	To lick ...	... Sanilak
Headcloth ...	... Bulang	Across the river	... Ipa
Neck ...	... Tengo	To use ...	... Bá bá
Different ...	... Wa ino	Village ...	... Liko
Here ...	... gagito	Forest ...	... gún

Mr. Rudler read the following paper for the author :—

FURTHER NOTES on the RUDE STONE MONUMENTS of the KHASI HILL TRIBES. By Major H. H. GODWIN-AUSTEN, F.R.G.S., F.Z.S., &c., Deputy Superintendent Topographical Survey of India. [With Plates ii. and iii.]

HAVING again visited the Khasi Hills since writing my last paper, I am enabled to give some further details regarding their

rude stone monuments. At the village of Noughshai, near Shillong, are to be seen some very striking monoliths; and although they do not come up quite to the length of those at Nurtiang (noticed by Dr. Hooker in his "*Himalayan Journals*"), yet they are very worthy of being mentioned. They stand on the open spur just above the village, and have been worked out of the beds of the Shillong sandstone series, and some of the smaller blocks have been taken from the conglomerate beds, the lowest in the series, and which come in, in the bed of the ravine, to the north of the spur. There are a number of monuments on this site, large and small, arranged both in line and on two sides of a square; the two largest have their central monoliths—height, 24 ft. 3 in.; width, 5 ft. 6 in.; thickness, 8 in.; and height, 23 ft. 2 in.; width, 2 ft. 9 in.; thickness, 1 ft., respectively.

Plate ii., which is taken from a photograph by Mr. William Robert, Assistant Surveyor in the Khasi Hills survey party, gives an excellent idea of the second largest structure, showing the very massive flat-stone, the "*Mao Kynthai*," in front. This structure consisted of thirteen upright stones, which could not all be brought into the field of the camera; but the six outside stones on the right are shown. Many of the slabs in the adjacent monuments have been overthrown and broken quite recently, perhaps by Sepoys and camp followers from the military station close by. At one time a mountain battery of Eurasian Artillery was quartered there, and I attribute the overthrow of so many of the stones in the neighbourhood to their handiwork, who would look on such amusement as a "great lark." The Sepoy (native of India) is not of a mischievous disposition; the European and half-European (uneducated) is markedly so. Thus the monument with the highest stone is imperfect, and it must, when perfect, have been a very handsome one. This is a sad pity, after the time and labour that must have been expended in its erection.

I did not observe any new slabs anywhere in the immediate neighbourhood. Noughshai must formerly have been a large and powerful village; it stands on a naturally very strong position, and old lines of fortification are to be traced on many sides, especially on the approach from the direction of the Falls of the Ümiam. These old lines of defence are on a curious system: a ditch and bank have been carried forward from the main defences from 200 to 300 yards down the ridge of the spurs, thus effectually preventing an enemy working round the hill sides below the villages.

This fortified site points to a state of things in these hills when the relations between the large village communities or

clans were very much as we find them at the present day among the Nagas and Kukis, beyond and bordering our present extreme limits, viz. that of constant feud. They are now the quietest, most peaceful, and contented of all the hill people on the eastern frontier.

In my former paper I did not allude to the cairns in these hills, which I am inclined to think are works of greater age than the stone structures. The custom is one that certainly has long since been given up, for I could not obtain any satisfactory account of them. They are only to be seen on the northern side of the Khasi plateau, and Dr. Hooker, in his account of his trips to the Kollong Rock, did not fail to notice them. About Mairaug and towards Nougstou they are very numerous, and always stand on commanding situations. On the path leading down the grassy spur to the stone monuments previously described, near Nougshai, is a very fine large example of a cairn, about eight feet high. They are usually plain hemispherical mounds of earth; but this one is faced all round at the base with slabs of stone about four feet high; they are frequently not higher than six feet. A distant view is shown in Plate iii.

Nowhere is there any trace of the earth that forms them having been excavated close by; it must, therefore, have been carried in some short distance, to avoid unsightly hollows near the structure. I should much like to have dug into one of these cairns, but was afraid to hurt the feelings of the people by doing so. They are very probably cineraries of an earlier form to those now made of stone, and this point it might be interesting to clear up.

Beyond the Khasi area no cairns are to be found, at least I had never come across any until visiting North Manipur last winter (1872—73), where, at the head of the Imphal river, on the direct road from Samaguting, are four fine cairns, all faced with large boulders. They are old, and the Nagas now living in the village near said they had been made by another clan of Nagas, who long ago had gone further north, and the site of whose village had been lately re-occupied by Kukis.

Mr. C. B. Clarke, in a paper read lately before your Institute, refers to the different forms of the cinerary in the Khasi Hills; but he has not quite exhausted the subject, or got further than I did, although with regard to the disposal of the ashes of the dead he gives some further interesting particulars.

As I think that drawings are of very great interest, and better exhibit the many different forms of bone depository or cinerary that have been adopted at different periods by tribes inhabiting localities very far apart, and often quite unconnected affinitively,

I give a sketch of a form of cinerary meriting attention, and not hitherto noticed (Plate iii.). Several of this form may be seen on a low spur near the Bazar of Jeddo at Shillong. The cinerary is above ground, and stands on a slightly raised platform; it consists of four thick stones, about three feet high, set on edge, and capped with a heavy top-stone; and, so far, it resembles the usual form, a figure of which is given in my first paper.* The approach to all these depositories is from the eastward by several low steps, and the whole structure is enclosed on three sides by large flat slabs (in the rough) standing on end—the largest being placed round the cinerary itself, overtopping it by three to four feet, and the remainder, thence diminishing in size, stand on either side of the steps. There are about six such monuments along the ridge of the spur, and I have seen no others similar elsewhere. They have been broken into, and the front stone removed, very probably by camp followers from our regimental bazar, which is close by. There is thus a double probability of their ultimate destruction altogether, should the station be extended in that direction.

EXPLANATION OF PLATES II. AND III.

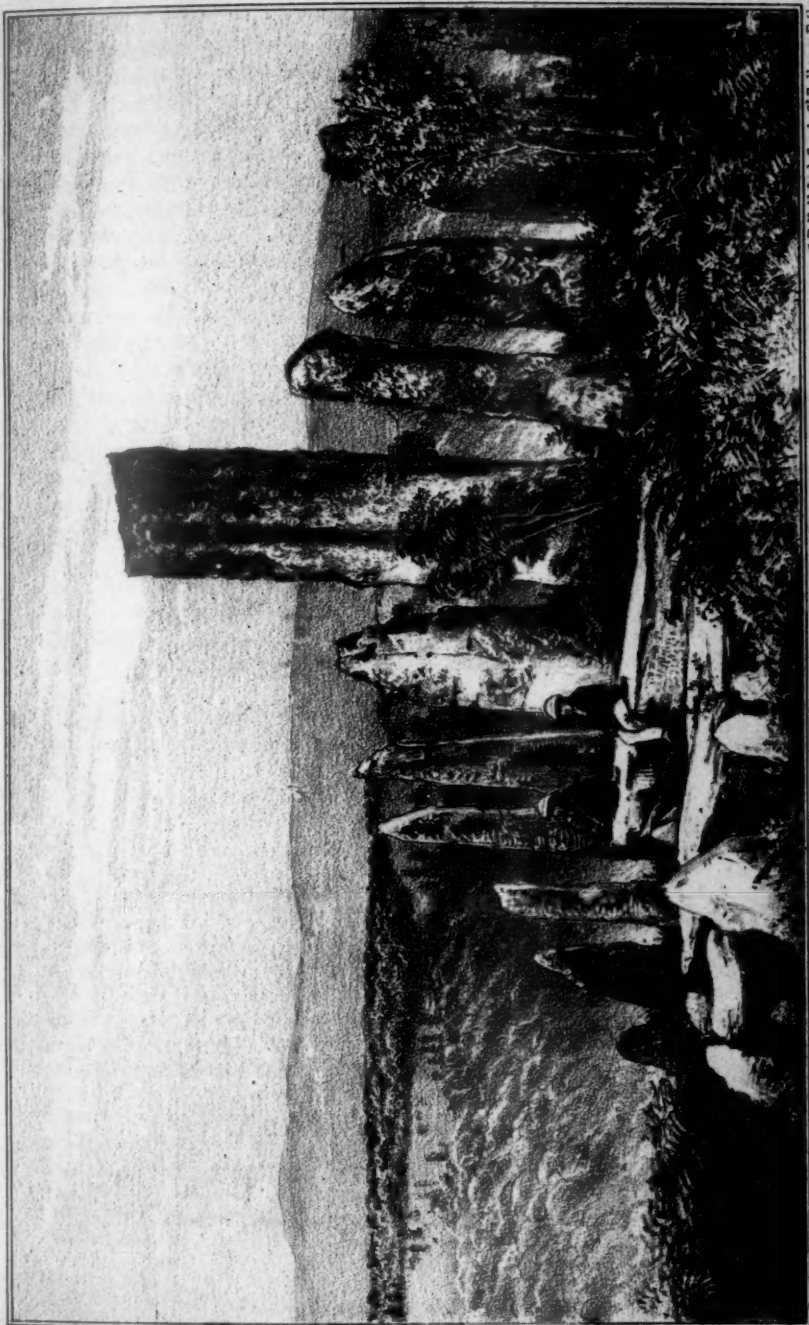
Plate II.—View of megalithic monuments at Nougshai, near Shillong, Khasi Hills. From a photograph taken by Mr. W. Robert.

Plate III.—View of rude stone cinerary and approach, at Shillong, Khasi Hills, with cairn in the distance: by the author.

DISCUSSION.

The PRESIDENT said that the paper of Lieut. de Crespigny, on the Milanows of Borneo, contained a great deal of extremely interesting information, especially in relation to their religious customs; the author, however, attempted to connect the Milanows with the inhabitants of Timor, through the similarity of their religious beliefs. He (the President) did not venture to express any opinion on this point, not having any grounds for forming one. He thought, however, that, as a general rule, evidence of identity of races, derived from the comparison of the religions of savages, must be received with caution, especially in the absence of any information as to physical resemblance. The attention that is devoted to religion arises from the interest that is taken in the subject, rather than from the value of the evidence it affords of connection with other peoples. There must always be a great liability to error in the accounts of the religious customs of savages. Inquiries into the resemblance of the arts of different people, about which there could be no mistake, were, he thought,

* Read May 1st, 1871.



STONE MONUMENTS, NEAR SHILLONG, KHASI HILLS.

C.F. Keil, Lith. Castle St. Holborn, E.C.



Engraved by H. B. Wood, from a drawing by the Rev. J. G. Thompson.

CINERARY AT SHILLONG, KHASI HILLS.

of more scientific value; and the vocabularies given by the author in this paper would, no doubt, be found of great use to comparative philologists. He hoped that the Institute would be favoured with some further information on the races of Borneo from Lieut. de Crespigny.

With regard to the paper by Major Godwin-Austen, he (the President) would say his communications were always welcome to the Institute. He wished that a more detailed account had been given of the intrenchment referred to. There appears to have been a great camp-building period in the life of most races, when neighbouring tribes were constantly at war, and each had its stronghold in case of attack. Such camps are conspicuous amongst the antiquities of nearly all parts of the world, and a comparison of the different systems of defence adopted, when viewed by the knowledge of the art of castrametation which we possess, affords reliable evidence of psychical connections. In the early British camps of this country he had never seen any evidence of the use of flanking defence except at the entrances; but the description given by Major Austin of this earthwork appeared to indicate that something of the kind was known to these people.

The following paper was taken as read:—

HISTORY of the HEUNG-NOO in their RELATIONS with CHINA.
(Translated from the Tseen-Han-Shoo.) By A. WYLIE, Esq.

(Continued from p. 452, Vol. III. of *Journal of Anthropol. Inst.*)

A FEW months after the accession of Hoo-han-seay Shen-yu, the country was restored to a state of comparative quiet, and the soldiers returned to their respective homes. The new chief raised his elder brother Hoo-too-woo-sze from among the people to the rank of Left Luh-le Prince. At the same time he sent to inform the Right Sage Prince of his position. There was a feeling among the nobles that this magnate should have been put to death; but the Shen-yu was more inclined to leniency. Conscious of his unpopularity with those about the chief, the Right Sage Prince deemed it the safest plan to raise a party of his own; and the same winter, in concert with Too-lung-ke, concocted a scheme for elevating the Jih-ch'uh Prince Poo-seu-tang to the supreme power, as Too-k'e Shen-yu. They raised several tens of thousands of troops, and made an attack on Hoo-han-seay from the east; when the troops of the latter were defeated and fled. Too-ke Shen-yu then took possession of the seat of government; appointed his eldest son Too-too-woo-se as Left Luh-le Prince, and the younger, Koo-mow-low-tow as Right Luh-le Prince, whom he retained at the Shen-yu's palace.

In the autumn of 57, Too-ke Shen-yu appointed the Jih-ch'uh Prince and Seen-heen-tan's elder brother the Right Yuh-keen Prince, as Woo-tseay Commandants, with twenty thousand cavalry each, to plant military colonies on the east, as a safeguard against attacks from Hoo-han-seay. About the same time the Hoo-këe Prince in the west combined with Wei-le Tang-hoo, to traduce the Right Sage Prince, and charged him with the intention of usurping the supremacy, under the style of Woo-tseay Shen-yu. Too-ke, who lent a too ready ear to these reports, had the Right Sage Prince and his son both arrested and put to death; but learning afterwards that it was a false accusation, he seized the accuser Wei-le Tang-hoo, who paid the penalty with his head. The Hoo-këe Prince on this, becoming alarmed for his own personal safety, withdrew, gathered a party round him, and set himself up as Hoo-këe Shen-yu. The Right Yuh-keen Prince hearing of this, immediately set up his claim, under the style of Keu-le Shen-yu. The Woo-tseay Commandant also endeavoured to create a cause for himself as Woo-tseay Shen-yu. Thus there were now altogether five contending Shen-yus in the field at once. Too-ke advanced at the head of his troops to attack Woo-tseay. Keu-le and Woo-tseay were both defeated, and fled to the north-west, where they united their forces with the army of Hoo-këe Shen-yu, making a total of forty thousand men. Woo-tseay and Hoo-këe then agreed to abandon their claim, and unite their strength in assisting to establish Keu-le Shen-yu. When the news of this confederacy reached the ears of Too-ke Shen-yu, he sent his Left Great General and Commandant with forty thousand cavalry to form military colonies, in order to secure the eastern border from surprise by Hoo-han-seay. He then led forward in person a force of forty thousand cavalry to attack Keu-le Shen-yu on the west. Keu-le was defeated and fled to the north-west. Too-ke moved south-west and settled in the Heih-tun territory.

Next year, Hoo-han-seay sent his younger brother, the Right Luh-le Prince with a party to invade the military settlements of Too-ke Shen-yu, when they killed and captured over ten thousand men. On hearing of this catastrophe, Too-ke put himself at the head of sixty thousand cavalry, and advanced to an attack on Hoo-han-seay. After a march of about a thousand *le*, before reaching the Jö-koo territory, he fell in with Hoo-han-seay's army, some forty thousand strong, when a battle ensued, in which Too-ke's troops were defeated, and he committed suicide. Too-lung-ke and Too-ke's youngest son, the Right Luh-le Prince Koo-mow-low-tow, escaped to China. Keu-le Shen-yu came eastward and submitted to Hoo-han-seay.

This chief's Left Great General Woo-le-k'euh, with his father Hoo-chih-luy, and Woo-le-wan-tun, seeing the state of anarchy ruling among the Heung-noo, led their troops southward to the number of several tens of thousands, and tendered their allegiance to China. Woo-le-k'euh was made Marquis of Sin-ching, and Woo-le-wan-tun Marquis of E-yang. About the same time the son of Le-ling again endeavoured to get up a party to establish the Woo-tseay Commandant as Shen-yu; but he was caught and beheaded by Hoo-han-seay. The latter then fixed his court at the Shen-yu's palace; but his forces were reduced by several tens of thousands. Too-ke Shen-yu's relative, the Heu-seun prince, with the five or six hundred horse-men under his command, attacked and killed the Left Great Tseay-keu, and uniting his troops to his own, went to the right-hand land, where he set himself up as Jun-chin Shen-yu in the west. Afterwards Hoo-han-seay's elder brother, the Left Sage Prince,* Hoo-too-woo-sze also set up a claim in the east as Che-che, Kuh-too, Marquis and Shen-yu.

In the year 54, Jun-chin Shen-yu led his troops eastward to attack Che-che Shen-yu, who gave him battle, killed him, and appropriated his forces. Che-che then advanced to attack Hoo-han-seay. The latter was defeated and his troops fled; while Che-che installed himself in the Shen-yu's palace. On the defeat of Hoo-han-seay, the left E-ts'ew-tsze prince strongly urged him to declare himself a subject and render homage to China. By submitting to China, he said, assistance would be obtained, and thus the affairs of the Heung-noo might be settled. Hoo-han-seay then called a council of his Great Ministers and submitted the question to them. The general expression of opinion was:—"By no means! It is the character of the Heung-noo to value independence and disparage submission. By mounting our steeds and fighting for the national cause, we have gained a renown for courage among all the nations, whose sturdy warriors fight to the death. Now we have brethren striving together for the supremacy; and if the elder is unsuccessful, it falls to the lot of the younger. Although they die in the contest, yet they leave an unsullied reputation for courage to their children and descendants, excelling all other nations. Although China is strong, that is no reason why the Heung-noo should be annexed to it. How should we thus subvert the institutes of our ancients, becoming subject to the Chinese, disgracing the former Shen-yus, and being made the laughing-

* This dignitary is named as the Left Luh-le Prince at the beginning of the Shen-yu's reign; but as Too-too-woo-se, the son of Too-ke, is also said to have been made Left Luh-le Prince the same year, perhaps the similarity of the two names may have induced a clerical error, and it is probable the present is the correct entry.

stock of all nations. Although we should obtain peace at this price, how can we any more be looked upon as the head of the nations." The Left E-ts'ew-tsze then addressed the assembly to this effect :—"Your counsel is not good. Periods of strength and weakness alternate in the history of nations. Now is the period of China's prosperity ; Woo-sun with its dependencies, and the other kingdoms have all become subject to it. Ever since the time of Tseay-te-how Shen-yu, the Heung-noo have been gradually dwindling down, and can never regain their former status. Although we exhaust ourselves striving after that, we shall never enjoy a day's repose. Now if we submit to China, our nation will be preserved in peace ; but if we refuse to submit, we are running into perdition. We cannot avert this by our plans." This speech was followed by a stormy discussion among the magnates.

After long deliberating on the question, Hoo-han-seay ultimately resolved to follow the counsel of the left E-ts'ew-tsze. Accordingly, in the year 53, he led his army southward to the neighbourhood of the stockades, and sent his son, the Right Sage Prince Choo-low-keu-tang, to reside at the Chinese court as a token of submission. Che-che Shen-yu likewise sent his son, the Right Great General Keu-yu-le-show, to reside at the court of China.

During the whole of the following year Hoo-han-seay Shen-yu was encamped outside the Woo-yuen stockade, waiting for a formal admission to pay court to the Emperor of China in person.

The New-year audience of 51 was to be one of signal honour, as marked by the submission of one of the principal potentates of Eastern Asia, and the ceremonial arrangements were on a corresponding scale. The Chariot Cavalry Commandant, Han Chang, was deputed to escort the chieftain. The route by which it was arranged he should pass lay through seven regions, to each of which two thousand cavalry were appointed to line the highway on both sides as far as the Kan-tseuen Palace, where the Shen-yu had the privilege of prostrating himself before the Son of Heaven. Extraordinary rites were decreed in his honour on the occasion, and his rank was fixed above all the lords and princes of the empire. His act of submission was pronounced with eulogium, without mentioning any name. The imperial gifts were presented, consisting of a cap, a sash, a suit of garments, the gold seal of investiture with an azure ribbon, a jade-ornamented sword, a dagger, a bow, four arrows, ten lances in covers, a chariot, saddle and bridle, fifteen horses, twenty pounds weight of gold, two hundred thousand coins of the realm, seventy-seven suits of inner clothing, eight thousand

pieces of embroidered, figured, and variegated silk, and six thousand pounds of raw silk. When the ceremonial was concluded, a commissioner was appointed to conduct the Shen-yu to his lodging for the night at Chang-ping;* the Emperor himself went to pass the night at Che-yang Palace. On reaching Chang-ping, the Shen-yu was instructed not to proffer the rites of hospitality. His Right and Left Tang-hoos and all his ministers ranged themselves along the road to see the cortège, while the barbarian princes, chiefs, marquises, and lords, to the number of several tens of thousands, all lined the road on both sides below the Wei Bridge, and as His Majesty ascended the bridge they all shouted, "Long live the Emperor."

The Shen-yu next proceeded to his hotel at Chang-gan, the capital, and after a stay of somewhat over a month, he was conducted on his way back. The Shen-yu requested permission to stay outside the Kwang-luh (*banqueting-house*)† stockade, that he might protect the Surrender city of the Chinese in case of emergency. The Chinese sent as an escort the Chang-lo Director of the Guards, the Marquis of Kaou-chang Tung Chung, and the Chariot Cavalry Commandant, Han Chang, with sixteen thousand cavalry. There were also considerably over a thousand of the border region troops and horses, who convoyed the chief beyond the Ke-luh stockade in Suh-fang. The Emperor ordered Tung Chung and his colleagues to leave a guard with the Shen-yu, to punish any refractory conduct. From first to last thirty-four thousand bushels of grain, rice, and dried provisions were distributed to the retainers. The same year Che-che Shen-yu also sent an envoy with offerings, who was received and treated with great liberality by the Chinese.

In the year 50 both the Shen-yus sent envoys to China to pay court, with offerings. The greatest favours were conferred upon the representative of Hoo-han-seay.

The following year Hoo-han-seay again attended the audience in person, when the ritual and the gifts were the same as on the previous occasion, with the addition of a hundred and ten coats, nine thousand pieces of embroidered silk, and eight thousand pounds of raw silk. As there were now military colonies, no cavalry escort was sent with him. At first Che-che Shen-yu, considering that Hoo-han-seay had submitted to the Chinese, conceived that his army would be so enfeebled that he would be unable himself to return. The former therefore took

* A place on King River, about fifty *le* to the south-west of King-yang district city, in Segau, the capital prefecture of Shen-se.

† So named as the first of the line of defences erected by Seu Tsze-wei, the banqueting-house magnate, from Woo-yuen outwards. (See *Shanghai Evening Courier*, August 25, 1873.)

his troops westward, intending to attack and settle the right-hand land. The youngest brother of Too-ke Shen-yu, who formerly waited on Hoo-han-seay, also took a portion of the deserted right-hand land, and with the remaining troops of his two elder brothers, to the number of several thousands, set himself up with the style of E-le-muh Shen-yu. Meeting with Che-che on the way they joined battle, when the latter killed his antagonist, and annexed his troops, over fifty thousand, to his own army. Hearing that China was raising troops and assisting Hoo-han-seay with funds, he fixed his dwelling in the right-hand land; but suspecting his force was insufficient to conquer the Heung-noo nation, he went still farther west, to the neighbourhood of Woo-sun. Wishing to gain the co-operation of that kingdom, he sent an envoy to the young Kwam-me (*king*) Leang-ke-woo. The latter, however, seeing that Hoo-han-seay was sustained by the Chinese, with whom he was desirous to ingratiate himself, and knowing Che-che to be but a refugee, he caused his envoy to be put to death, and sent his head to the Protector-General. He then sent eight thousand cavalry to meet Che-che, who, seeing such a numerous Woo-sun army, while his envoy had not returned, suspected how matters stood, and urged his own troops on to the attack. Woo-sun was defeated, and Che-che moved north to attack the petty kingdom of Woo-kee. That state having submitted, he next moved westward, and defeated Keen-kwan.* On the north he brought the Ting-ling under subjection, and annexed their king and kingdom. He made several attacks on Woo-sun, and was always victorious. Keen-kwan, where Che-che made his metropolis, was seven thousand *le* west from the Shen-yu's palace, and five thousand *le* north of Keu-sze.

The Emperor Yuen-te had just ascended the throne in 48, when a letter from the Shen-yu announced the fact that his

* A native commentator tells us that this is the nation known as Kee-kuh at the beginning of the Tang, and Hea-kea-sze at the end of the same dynasty. On this term, Phillips says:—"The ancestors of the Kirghiz of our day. They are probably a people of Samoyade race blended with the Ting-ling, who belonged to the same fair race as the Woo-sun. Under the Han, 200 B.C., the Hakas were called Keen-kwan, and it was not till the time of the Tang dynasty, 700 A.D., that they received the name of Hea-kea-sze. Their settlement began to the west of the Ouigours and to the north of Yen-ke or Karaahar, and extended northward as far as the Irtysh and the Ob in southern Siberia. The men were of tall stature, with light hair, fair complexion, and blue eyes. These people were formerly commingled with the Turkish and Mongol tribes, which made them lose their ancient language, in the place of which they had adopted the Turkish dialect. This commingling with these tribes has not, however, quite destroyed the characteristic marks of their external appearance, for one often still sees, among the Kirghiz, people with red hair and blue or green eyes."—Doolittle's "Vocabulary and Handbook," vol. ii. p. 209.

people were suffering extreme distress from poverty and famine. By imperial order, twenty thousand bushels of rice were forthwith distributed among them, from the regions of Yun-chung and Woo-yuen.

Seeing the protection and patronage his rival Hoo-han-seay was receiving from the Chinese, the jealousy of Che-che was roused; and in view of the great distance at which he was residing from the Chinese metropolis, he sent a letter begging that his son might be excused attendance at court, and sent back to his home. The officer Kuh Keih escorted him to his father's abode, a voluntary service which was ill requited by Che-che, who put the Chinese envoy to death. After a time, no news having been heard of Kuh Keih, inquiries were set on foot by the Chinese, when some of the Heung-noo, who had tendered their submission, said there was a rumour afloat that the whole party had been killed by the (*gow-p'o*) "border guard." On the arrival of an envoy from Hoo-han-seay, he was put through a most rigorous examination in regard to the matter.

Next year the son of Hoo-han-seay Shen-yu was sent back, under the escort of the Chariot Cavalry Commandant Han Chang, and the Banqueting-house Great statesman Chang Mang, who were charged with a commission to investigate the matter of Khu Keih's party. The result was the complete exculpation of the Shen-yu, without a shade of suspicion against him. At the same time Hang and Chang observed, from the flourishing and populous condition of the Heung-noo settlement, that they had more than regained their former prosperity; and that the territory outside the stockades was no longer tenanted by the beasts of the forest and the desert. Confident in his strength, the Shen-yu was now free from apprehension in reference to Che-che; and it was rumoured that he had been strongly urged by his principal ministers to return to the north. Now it occurred to the two Chinese envoys, that should Heung-noo once remove to their northern home, there would be little chance of getting them bound by any treaty, and so took the opportunity of drawing up a solemn contract to the following effect:— "Henceforth the Chinese and Heung-noo are united as one family, and hereby bind themselves through all future generations never to deceive or attack each other. When robberies occur they will mutually sustain each other in chastising offenders, and making reparation for damages. When raids take place, they will assist each other with troops to quell disturbances. May the first to break this bond, whether Chinese or Heung-noo, be visited with the malediction of heaven! This oath

shall be binding on their children and descendants from generation to generation." For the accomplishment of the customary rights, Hang and Chang accompanied the Shen-yu and his high ministers to the top of a hill on the east of the Heung-noo No river. A white horse was then killed; a knife and some gold were deposited in the roadway and ploughed over. Wine was poured into a bowl made of the skull of the Massagetæ king, who had been decapitated by Laou-shang Shen-yu; and all having drunk of it, the ceremony was thus concluded and the bond ratified. On their return, Hang and Chang reported this transaction. The dukes and high ministers, however, in deliberating over it, came to the decision that "the Shen-yu, while protecting the stockades, was a Border dependant, and even should he move north, could not be considered dangerous. Hang Chang and Chang Mang, in pledging the children and descendants of the Chinese through all future generations to an oath of imprecation with barbarous tribes, had exposed the Imperial family to shame, in the event of the Shen-yu choosing to appeal to heaven in confirmation of any nefarious statement, and had thus acted detrimentally to the dignity and character of the empire; so that the deed must not be confirmed. An envoy ought to be sent to offer a sacrifice to heaven, and have the oath repealed by mutual agreement." Hang and Chang were entrusted with this commission; but having no written statement of their offence when they arrived at the Heung-noo camp, they were silent as to any blame having been attached to them by the Emperor. They said the imperial order to them was to discuss the question of redemption of prisoners, but they did nothing towards the repeal of the oath.

In the year 43, Hoo-han-seay returned north to his palace; and his people all gradually drew together from the various quarters, so that the old country again became settled and tranquil.

Che-che Shen-yu, knowing that he had incurred the odium of the Chinese, by the murder of their envoy, and hearing of the increasing power of Hoo-han-seay, began to be apprehensive of an attack from him, and conceived the idea of removing to a greater distance. It happened about the same time that the king of Kang-keu,* who had been frequently distressed by Woo-sun, consulted with his Heih-how what was best to be done. Their conclusion was: "The Heung-noo are a great nation, to which Woo-sun was formerly subject. Now Che-che

* The ancient name of Shoghnan, or Sogdiana in Independent Tartary, inhabited by the Sacai, a wild race. It was called Kang-kwoh during the Tang dynasty, when, as well as in the Suy time, the people of the country were great rovers.—Smith's "Vocabulary of Proper Names," p. 17.

Shen-yu is driven to extremities, beyond the boundaries of their land. If we make an overture to him, inviting him to locate himself on our eastern border, by uniting our troops we may take Woo-sun, and place him over it. Thus we may also be permanently delivered from the Heung-noo annoyances." In accordance with this counsel, an envoy was despatched to Keen-kwan to communicate with Che-che. The latter, who at first had feared and afterwards hated Woo-sun, heard with much satisfaction the proposal from Kang-keu. The conditions were settled without difficulty, and but a short time elapsed ere Che-che began to move westward with his forces. Kang-keu at the same time sent one of the nobles of the country to meet Che-che, with several thousand horses, asses, and camels. A great number of the Heung-noo, however, perished on the way from cold and privations, so that there was only a remnant of three thousand reached Kang-keu.

In the year 35, the Protector-General, Kan Yen-show, and the Deputy Ch'in Tang raised troops, went to Kang-keu and decapitated Che-che; the details regarding which are to be found in the memoirs of Kan Yen-show and Ch'in Tang.* The news

* The event here referred to is one of those dashing adventures that deserve a place in the annals of military fame. The fact of Che-che and his people having moved westward to Sogdiana coming to the ears of the Chinese, a deputation was sent to that country, a distance of between three and four thousand miles from the western metropolis of China, to make inquiries regarding the fate of Kuh Keih and his party. Che-che, who had become elated by his recent victories, having treated the king of Sogdiana with marked contempt, and built a fortified city for himself, now oppressed and insulted the Chinese commissioners, refusing to receive the imperial dispatch. Ch'in Tang, however, was not the man to be trifled with. Of undaunted courage and enlarged views, his mind was keen to grasp the exigencies of the position, and prepared to carry out the most daring exploit. Submitting his views to his superior officer, Kan Yen-show, he remarked: "The barbarous are easily overawed by a show of power, and readily submit to the most formidable. All the kingdoms in these regions were originally subject to the Heung-noo; and now the fame of Che-che's valorous deeds has spread far and wide. He has already invaded Woo-sun and Ta-wan, intending to subject these nations. Should he gain his point, all the kingdoms under our protectorate will be in a precarious position for many years. He is a man of great prowess, who delights in war, and presuming on his repeated victories, he has become the scourge of the west. Our plan now is to assemble the military colonists, and uniting with the troops of Woo-sun, advance direct to his city, when he will neither have the means of escape, nor be able to defend himself. Thus in one day we shall achieve a renown that will last for a thousand years." Kan Yen-show wished to memorialise the throne on the subject; but Ch'in Tang, who saw that would be fatal to his scheme, demurred. And so the matter was held in abeyance for a time. It happened, however, that Kan fell sick, and the supreme control of the military devolved on Ch'in, who made a great levy of troops among the neighbouring kingdoms, and assembled the Chinese military colonists to co-operate with them. On the recovery of Kan, he was alarmed, and would have put a stop to the movement, but Ch'in, irritated at his timidity, laying his hand on his sword, exclaimed—"The army is already collected. Boy! would you throw any obstacle in the way?" Kan ultimately assented. More than forty thousand troops were assembled, and Ch'in

of the death of Che-che proved very welcome to Hoo-han-seay. At the same time his joy was not unalloyed by a tincture of fear. In a despatch to the Emperor, he observed: "I have ever cherished the desire to announce a visit to your Sacred Majesty; but truly, while Che-che was in the west, I was apprehensive that he might unite with Woo-sun in an attack upon your servant. Thus I have always been withheld from paying court; but now that Che-che has received the due reward of his deeds, it is my humble desire to be present at an audience."

In the beginning of the year 33, the Shen-yu made his promised visit to the metropolis of China, and again had the opportunity of prostrating himself before the Emperor. The same gifts were bestowed upon him as on the first occasion, with additional favours of clothes, embroidery, silk stuffs, and raw silk, all double the amount of the additional gifts in 49. The Shen-yu then expressed his desire for an alliance with China by marriage. Yuen-te assented, and conferred on him Wang Tseang, a lady from his harem, from a family of position, with the epithet of Chaou-keun.* The Shen-yu was delighted with his acquisition, and advancing in confidence, addressed a

memorialised the throne on the subject. The same day the body began to advance, and when within thirty *le* of Che-che's city, the camp was pitched. Che-che sent a messenger to inquire what the Chinese troops had come for, to which the Commander replied: "Your highness addressed a memorial to the throne, saying that you were driven to extremities, and that you wished to be present at an audience. The emperor, compassionating your highness in having to leave your own country and take refuge in Sogdiana, has sent the Protector General with an army to meet you and guard you from surprises on the way. Before approaching your city, envoys have several times passed between us, under the protection of the Chinese. We have come a great distance on account of your highness; but you have not yet sent a prince of name, or a high dignitary to confer with our general. Why has your highness all at once thought out schemes, and neglected the rites of hospitality? Our troops have come a long way; our men and animals are prostrated; our supply of food has failed; and it is doubtful if we shall have the means of returning. We wish your highness to consult with the Great Minister." Next day they advanced upon the city, surrounded and set fire to it on all sides. When the flames burst forth simultaneously, the colonists, shouting with joy, shook the very ground with the clamour of bells and drums. The Sogdians availed themselves of their local knowledge in attacking the assailable points, while the Chinese forces advanced in every direction under cover of their shields. The Shen-yu was mortally wounded and decapitated. The signets of two Chinese envoys were found in his habitation, besides other relics of Kuh Keih and his party.

* The novelists and dramatists of China have drawn largely on their imagination in investing the adventures of this lady with a romantic interest, the details of which are unknown to history. There is probably no heroine whose name has become more generally known in China than the unfortunate Chaou-keun. As the story runs, while crossing the Amoor river, on her way to her Tartar home, she terminated her existence by plunging into the seething waters. The sober annals of the period, on the contrary, tell us that she lived (it may be happily) with her chieftain lord till his death, and bore him a son. After that she was espoused to the son of the deceased husband, and bore him two daughters,

letter to the Emperor, proposing that the stockades on the border of the empire, from Shang-kuh westward as far as Tun-hwang, should all be placed under the protection of himself and his successors in perpetuity, and that the employment of the native troops and guards should be suspended; thus relieving the Emperor and his people from all anxiety. The proposal was handed over to the proper board for consideration, and was almost unanimously approved. The Gentleman-usher How, alone, handed in a memorandum dissenting from the project. The Emperor requesting a detailed statement of his views, he laid the following memorial, with ten objections, before the throne:—

1. The ferocities and cruelty of the Heung-noo have been notorious from the time of the Chow and the Tsin, which were harassed by their marauding border incursions; and at the accession of the Han their depredations became still more audacious. Your servant understands that outside the northern border stockades, as far as Leaou-tung, for more than a thousand *le* from east to west, runs the Yin mountain range, covered with dense forests and prolific vegetation, where birds and beasts are profusely abundant. This was the cover under which Maou-tun Shen-yu at first took shelter, to manufacture his bows and arrows, and from which he issued to make his raids. In the reign of the Emperor Woo, troops were raised to chastise the barbarians, who expelled them and took possession of that country. The Heung-noo were then driven north into the desert. Stockades were erected to mark the boundary, the roads were skirted with look-out towers, extra-mural cities were built, and military colonies were established for protection. After this there were intervals of peace on the border. The desert country on the north is level, covered with coarse sand, and very little wood or vegetation, so that when the Heung-noo came marauding, there was scarcely anything to conceal them. From the stockades southward the roads lie deep among the hills and valleys, and the passage is beset with uncommon difficulties. Men of age and

one of whom was also demanded by Wang Mang to wait upon the Empress Dowager. The tragedy is familiar to English readers, through Davis's translation, entitled "The Sorrows of Han." The topographical knowledge of the tragedian must have been very imperfect, to make the procession cross the Black Dragon or Amoor river, as the boundary between the Chinese and Heung-noo territories, in order to reach the Heung-noo capital. For the Heung-noo territory never reached north of the Amoor, and at the time in question the court was somewhere near the sources of the Selenga. There is, however, an affluent of the Yellow river, called the *Hih-shuny* or "Black water," two or three days' journey beyond the Great Wall, on the north of Shan-see. This was probably the boundary between the two nations at the time, and may have given rise in some way to the error. Besides this and other discrepancies in the Chinese text, Davis adds several of his own in the translation,

experience on the borders remark, that since the Heung-noo lost the Yin mountains, their trespasses have invariably been unsuccessful. If now we abandon the frontier and stockade guard, we shall give a great advantage to the barbarians.

2. The sacred virtue of our dynasty, expansive as the heavens, overshadows even the Hueng-noo, and these, in acknowledgment of the great blessings of their life and well-being, have come to prostrate themselves before the throne. Now, it is the disposition of barbarians to be humble and tractable in the time of their distress, but haughty and refractory at the period of their strength. The extra-mural cities have been abandoned, and the look-out towers along the roads left to ruin, so that now we have no means of distant observation, and the beacon fires are our only reliance. Were they not formerly blind to the dangers of the future?

3. China is an empire enjoying the benefits of civilisation and instruction, and has also its pains and penalties for criminals. Still there are besotted people who transgress the statutes. How much less is the Shen-yu able to prevent his people breaking the treaty?

4. When barriers and bridges were first constructed in China, they were intended as a check upon the princes of the empire, in order to restrain the covetous graspings of officials. Stockades were erected and colonies planted, not merely on account of the Heung-noo, but also on account of the people from the various subject kingdoms who have tendered their allegiance. These, being formerly subjects of the Heung-noo, it is possible the revival of old associations might induce in them the thought of absconding.

5. Recently the Western Keang,* who were protecting the stockades, established an intercourse with the Chinese; and in their rapacity the border guard invaded the people, robbed them of their cattle, and carried off their wives and children. A fierce animosity has thus been generated, the people have risen against their oppressors, and a state of things has come about which generations will be unable to repair. Now, should the native guard of the stockades be suspended, any slight misunderstanding may be easily aggravated into a prolonged contention.

6. Formerly numbers of those who followed the army were

* Eastern Tibetans. They are descended from the San-meaou, who were aboriginal inhabitants of China, and whose kingdom was situated near the mountain Hang-shan, in the province of Hoo-kwang, to the south of the Tung-ting Lake. Having been driven to the west of China, they were called Western Keang. At the time of the Emperor Shun, 2250 B.C., they were called San-wei, and they dwelt in the neighbourhood of Tun-hwang, to the north-west of China.—Doolittle's "Vocabulary and Handbook," &c., vol. ii. p. 207.

killed, and their children, having fallen into poverty and distress, will be on the alert to seize an opportunity to abscond in search of their relatives.

7. Many borderers and slaves, male and female, who are living in abject misery, hear of the freedom and happiness of the Heung-noo, and, never thinking how it will fare with them in the day of adversity, will be ready to avail themselves of an opportunity to abscond by the stockades.

8. Thieves and brigands, bold and merciless, will combine in bands to break the laws, and, when driven into straits, will make escape by the north, and thus set all authority at defiance.

9. It is now more than a century since the stockades were erected, during which time the work of levelling the roads has been progressing. Precipices have been bridged, watercourses have been trained, and the roads have gradually become practicable. The merit of the troops in these constructions during this long period is incalculable. Your servant is afraid your advisers have not taken the whole history of the question into their deepest consideration. Suppose you dispense with all the dependent border guards; then, if after ten years, and within a century from this time, a revolution takes place among the troops, the fortresses and stockades being destroyed, and the look-out towers and roads demolished and gone to decay, it will be needful again to send military colonies to restore them. No, the meritorious service of past generations must not be utterly abandoned.

10. If the border troops are suspended, and the look-out towers dispensed with, while the Shen-yu himself defends the stockades and protects the imperial domain, he must have a heavy claim on the obligations of China, and his requests will accordingly be incessant. If his desires are not fully complied with, then it is impossible to foresee the result. When a quarrel is commenced with the barbarians, the security of China is not to be relied on. This is not the way to maintain a lasting peace, nor is it a wise policy in reference to the treatment of barbarous nations.

This memorial approved itself to the monarch's judgment, and he stayed all further deliberation regarding the abandonment of the border stockades. He then commissioned the Chariot Cavalry General to communicate orally with the Shen-yu, to the following effect:—"A letter from your highness has been received, expressing your wish that the northern border officials and the military colonies should be suspended, and the stockades placed under the protection of yourself and descendants. Truly the tendency of your highness's mind is towards propriety and rectitude, which accounts for the extreme

liberality of your projects for the benefit of the people. I am wrapt in admiration of your far-sighted plan. But through every part of China there are barriers, bridges, fortresses, and stockades; so that they are not intended merely for protection against extra-mural contingencies, but are also to guard the kingdom against traitorous intrigues, and with a view to the extinction of brigandage. Thus the laws are made plain, and there is an appeal to the minds of the people." "Tell the Shen-yu respectfully," said the monarch, "that I have not the least doubt of the rectitude of his intentions; and lest he should think it strange that his proposal is not accepted, I have sent the Great Master of the Horse, the Chariot Cavalry General Kea, to communicate with him on the matter."

The reply was taken in good part by the Shen-yu, who thanked the Emperor, saying: "My dulness prevented me fully comprehending the bearings of this great policy. It was very liberal of the Emperor graciously to send your excellency to instruct me."

It was the Left E-ts'ew-tsze who first proposed to the Shen-yu the project of repairing to the boundary of China, in order to secure a state of peace. After that some one misrepresented the E-ts'ew-tsze, who had himself counteracted his merit, by his constant vacillation, till Hoo-han-seay began to suspect him. The Left E-ts'ew-tsze, fearing he might be put to death, repaired to China with his dependants, more than a thousand in all, and tendered his allegiance. He was then created Marquis of Kwan-nuy, with a revenue of three hundred houses, and instructions to wear his prince's seal and ribbon at his waist.

The same year Hoo-han-seay happened to be again paying court, together with the E-ts'ew-tsze, when the Shen-yu took occasion to thank the latter, saying: "Your highness drew out a most admirable project for me. It is to your force of character that the Heung-noo are indebted for their present peaceful condition. How can I forget your virtues! Through failing to apprehend your highness's meaning, I have been the culpable cause of your departure. But we will no longer dwell on the past; I am now about to request the Emperor that you may return to our court." The E-ts'ew-tsze replied: "Your highness, who relies on the decree of heaven, has submitted to China and obtained rest and peace. If the Shen-yu, who possesses supernatural intelligence, is protected by the Emperor, how could I be so double-minded as, having already submitted to China, to return again to the Heung-noo? Let me rather remain as your highness's resident commissioner at the court of China, for I dare not obey your commands." The

Shen-yu preferred his request, however, but without success. He then returned with Wang Chaou-keun, who was designated the Ning-hoo consort. She bore him a son, named E-too-che-ya-sze, who was made Right Jih-ch'uh Prince.

Hoo-han-seay died B.C. 31, being in the twenty-eighth year of his reign. His two favourite wives were both daughters of the Hoo-yen prince, the elder brother of the Left E-ts'ew-tsze. The elder sister, designated the Chuen-keu Consort, had two sons; the first-born named Tsu-mo-keu, and the second Nang-che-ya-sze. The younger sister, styled the Great Consort, had four sons; the first, Teaou-t'aou-mo-kaou, and the second Tsu-me-seu, both older than Tsu-mo-keu; the juniors, Heen and Lo, were both younger than Nang-che-ya-sze. There were more than ten sons by the other Consorts. The Chuen-keu Consort made much of Tsu-mo-keu, of whom she was very fond. When Hoo-han-seay was on his death-bed he wished to appoint Tsu-mo-keu his successor; but his mother objected, saying: "For more than ten years the Heung-noo have been in a state of turbulence, and within a hair of being exterminated. Thanks to the power of China, peace has been again restored; but now they are scarcely settled, and while still smarting from their wounds, are again quarrelling and fighting. My son is but young, and the people not being yet attached to him, I fear it would be again bringing the nation into danger. The Great Consort and I are both daughters of the same parents; and it were far better to appoint his senior Teaou-t'aou-mo-kaou."

To this appeal the Great Consort rejoined:—"It is true that Tsu-mo-keu is young; but then the government of the nation is in the hands of the great ministers. To set aside the noble in order to make way for the mean would be a fruitful source of turbulence in the future." The Shen-yu ultimately adopted the counsel of the Chuen-keu Consort, appointing Teaou-t'aou-mo-kaou to the succession, with the stipulation that his younger brother should in turn succeed him. On the death of Hoo-han-seay, Teaou-t'aou-mo-kaou was installed under the style of Fow-choo-luy Joe-te Shen-yu. Immediately on the assumption of power, he sent his son the Right Che-loo-urh Prince He-hee-too-noo-how as resident to the court of China. He appointed Tsu-me-seu as Left Sage Prince, Tsu-mo-keu as Left Luh-le Prince, and Nang-che-ya-sze as Right Sage Prince. He then took to wife the widowed consort Wang Chaou-keun, by whom he had two daughters, Seu-po Keu-seun-yun and Tang-yu Keu-seun-yun.

Towards the end of B.C. 28, the Shen-yu sent the Right Kaou-lin Prince E-seay-mo-yin and others with offerings, to be present at the first month's audience of the following year. On

the conclusion of the rites on that occasion, the envoy was escorted back to his temporary lodging, when he expressed his wish to become a Chinese subject, and intimated that were his proposal not accepted, nothing remained for him but to commit suicide, as he could never venture to return. When this desire was made known to the Emperor, he referred the matter for deliberation to the Dukes and High Ministers. Some of the council said his submission ought to be accepted, the same as on former occasions; but the Banqueting-house Great-statesman, Kuh Yung and Councillor Too Kin expressed their views thus:—"At the beginning of our dynasty, when the Heung-noo were committing frequent raids on the border, wealth and dignities were held out as an inducement to them to submit. Now, however, Shen-yu has stooped to declare himself a subject, and is ranked as a northern border dependant. Having sent an envoy to court with offerings, we must beware of double-dealing with him. We must adopt a different course from formerly. Having already accepted the Shen-yu's tributary offerings, should we also receive his subjects who abscond, this would be coveting the service of one man at the expense of the national honour; cherishing a guilty subject, to the loss of a well-disposed prince. Now, the Shen-yu is just beginning his reign, and having shown a desire to confide himself to China, should we, without knowing the merits of the case, accept the crafty submission of E-seay-mo-yin, to the detriment of the public good, we may alienate the Shen-yu, and demoralise the authorities at the border. It may be that he is merely adopting a deceptive stratagem, in order to generate a quarrel, and by assenting, we may fall into his plot. By countenancing the crooked, we reprobate the straightforward. This is really the source of peace or turbulence on our borders, and the principal cause to which we must attribute the activity or suspension of military operations. The subject requires careful consideration. It is undoubtedly best to decline his submission, and thus manifest an integrity unsullied as the luminaries of heaven. To repress deceitful stratagems, is to encourage a spirit of loyal attachment." This memorial was approved by the Emperor. The Inner Gentleman-usher, General Wang Shun, went to inquire the particulars about the envoy's submission; but E-seay-moy-in replied that his former perfidious statement was made under the influence of a delirious sickness. He was then sent back, and returned to the same official status as before, but would never meet the Chinese envoys.

Next year, the Shen-yu forwarded a letter expressing his desire to come to court.

In accordance with his intimation, the chief presented him-

self at the New-year audience in 25 ; on which occasion he was presented with twenty thousand pieces of embroidered, figured, and variegated silk, and twenty thousand pounds of raw silk, with other objects the same as in 33.

After a reign of ten years, Fow-choo-luy Shen-yu died in B.C. 20, and was succeeded by his younger brother Tsu-me-seu as Sow-heae Jo-te Shen-yu. The first act of the new chief was to send his son the Left Chuh-too-han Prince Heu-lew-sze-how to reside at the Chinese court. He made Tsu-mo-keu Left Sage Prince, the dignity from which he himself had been promoted.

Sow-heae had been Shen-yu for eight years before he attended an audience, and it was not till the year 12 that he entered China the first time for that purpose.

Next year he again set out on a similar expedition, but before reaching the stockades he fell sick and died. Tsu-mo-keu succeeded as Keu-ya Jo-te Shen-yu, and sent his son the Yu-too-keu-tan Prince Woo-e-tang to reside at the court of China, while his brother Nang-che-ya-sze was appointed Left Sage Prince.

Keu-ya Shen-yu died in B.C. 8, being the fourth year of his reign, and was succeeded by Nang-che-ya-sze as Woo-choo-lew Jo-te Shen-yu. On assuming power he made Lo the son of the first Consort Left Sage Prince, and appointed Yu, the son of the fifth Consort, as Right Sage Prince. At the same time he sent his son, the Right Koo-noo Prince Woo-te-ya-sze to reside at the court of China. The Chinese sent the Inner Gentleman-usher General Hea-how Fan and the Deputy Master Controller Han Yung as a deputation to the Heung-noo. About this time a representation had been made to the Emperor's uncle, the Grand Master of the Horse and Light-horse General Wang Kan, who was Acting President of a Supreme board, to the following effect :—"The Heung-noo are in possession of some territory irregularly jutting out into the Chinese empire, which properly belongs to the region of Chang-yih. That land possesses a rare kind of wood peculiarly suited for the manufacture of arrow shafts, and also the falcon, the feathers of which are required for the same weapons. Were we in possession of this land, our own borders would then furnish us with these materials in abundance. If you can secure this addition to the imperial dominions, the renown of your merit will extend through all generations." When Wang Kan took occasion to speak to the Emperor regarding the advantages of this land, the monarch was for making a direct request to the Shen-yu for it. But Wang Kan, considering that, in case of refusal, the Emperor's orders would be dishonoured and his dignity compromised, merely intimated the Emperor's wishes to Hea-how Fan, leaving

it to his own tact to prefer the request. When the commission reached the Heung-noo, Hea-how Fan stated the matter in detail to the Shen-yu thus:—"I observe that the Heung-noo possessions jut out irregularly into the Chinese dominions in a place which should properly belong to the region of Chang-yih. Three Commandants reside at the stockades there, with a complement of several hundred soldiers, cold and miserable, keeping a long and wearisome look-out. It would be well for your highness to address a despatch to the Emperor, making an offering of this land; that so, by having it cut off in a straight line with the boundary, two Commandants and several hundred men may be economised—as an acknowledgment of the Emperor's bountiful favours—which will certainly call forth a rich reward." The Shen-yu inquired:—"Is this a message from the Emperor, or does the request come from your Excellency?" Hea-how Fan replied:—"The Emperor has indicated his desire; but I have taken upon myself to suggest the way in which it may be managed." The Shen-yu rejoined:—"The Emperors Seuen-te and Yuen-te, compassionating my father Hoo-han-seay, granted to the Hung-noo all the land north of the Great Wall. The land in question is the territory of the Wan-gow-too Prince, and I do not know the reason of its configuration. I beg you to allow me to send an envoy to make inquiry." Hea-how Fan returned to China, and was afterwards again sent to the Heung-noo. On his arrival, he again opened up the question of the land. The Shen-yu replied:—"It is not customary in China to ask for what has been handed down from one's ancestors for five generations. But I have ascertained the reason of your uncommon request. Having inquired of the Wan-gow-too Prince, I find that the timber used by the Heung-noo princes on the western border, for building their state tents and carriages all comes from these hills. This being our ancestral land, we must not part with it." On Hea-how Fan's return to China, he was made Governor of Tae-yuen. The Shen-yu sent an envoy with a despatch to the Emperor, giving a report of his negotiation with Hea-how Fan in reference to the land. An imperial reply was sent to the Shen-yu, saying:—"Hea-how Fan's crime is deserving of death, for having on his own responsibility made use of my authority in requesting the land from your highness. This is the second time that he has escaped through a general amnesty. I have now removed him to be Governor of Tse-nan, and he will not again be allowed to negotiate with the Heung-noo."

Next year the Shen-yu's resident son died, and the body was carried back to be buried. He then sent another son to court, the Left Yu-too-keu-tan Prince Ke-lew-kwan.

In the year B.C. 5, one of the secondary sons of the Woo-sun family, Pe-yuen-ch'e Heih-how, with his dependants, made an incursion on the Heung-noo western border, on a plundering raid, carried away their oxen and animals, and committed a great slaughter among the people. On hearing of this, the Shen-yu sent his Left Great Tang-hoo Woo-e-ling to make an attack on Woo-sun with five thousand cavalry, on which occasion they killed several hundred people, took more than a thousand captives, and drove off their oxen and animals. Pe-yuen-ch'e, being alarmed, sent his son Ts'eu-t'ae, as a hostage to the Heung-noo. The Shen-yu received him, and sent a statement of the affair to the Emperor. Consequent on this, the Inner Gentleman-usher General Ting Yay-lin and the Deputy Master Controller Kung Shing-yin were sent on a mission to reprove the Shen-yu and cause him to send back the hostage son of Pe-yuen-ch'e. The Shen-yu readily complied with their injunctions, and returned the hostage to his home.

A letter arrived from the Shen-yu in B.C. 3, expressing his wish to be present at the audience the following year. The Emperor Gae-te was at that time lying sick, and it was said, "The Heung-noo are coming from the head waters with their destructive influence. Formerly, when the Shen-yu came to court, in the years 49 and 33, both occasions were immediately followed by national calamities."* The Emperor became apprehensive, and laid the matter before the Dukes and high ministers. They also thought it a useless expenditure of the national resources, and recommended a refusal of the request. The Shen-yu's envoy having received the reply and performed the valedictory rites, had not yet taken his departure, when the Usher of the Yellow Gate, Yang Heung,† laid the following remonstrance before the throne:—"Your servant understands that, according to the classics, the perfection of government consists in preventing insurrectionary troubles, and the highest point of military art is to avoid the occasion of war. These are two subtle points, but they form the roots of great events, and may not be disregarded. Now the Shen-yu has sent a despatch requesting to be admitted to an audience, and your Majesty has dismissed his envoy with a refusal. It is the humble opinion of your servant that this is the commencement of a quarrel between the Chinese and Heung-noo. The barbarians of the northern lands could never

* The national calamity referred to was the death of the Emperor. In 49 Seuen-te died, and 33 was the last year of Yuen-te's life. Remembering these events, the proposed visit of the Shen-yu, while the Emperor was laid aside by sickness, did not fail to arrest the attention of the observers of omens.

† See "Notes on Chinese Literature," pp. 66, 67, 69.

be brought into subjection by the Five Emperors of antiquity; nor could the Three ancient Kings bring them under the control of government, obviously because they were unwilling to induce a quarrel. But without wandering into the realms of remote ages, your servant begs, in confirmation, to refer to events since the era of the Tsin. Under the strong rule of the Emperor Che of that dynasty, the valiant Mung Teen, at the head of more than four hundred thousand warriors clad in mail, did not venture to look into Se-ho, but built the Great Wall to serve as a boundary. At the commencement of the Han, the Emperor Kaou-tsoo, with his three hundred thousand valiant spirits, were all surrounded in Ping-ching, and for seven days the troops were without food. Then there were an abundance of counsellors with strange and ingenious schemes, and ministers with unimpeachable expedients; but the means by which the captives were eventually released has never been published to the world. After that, the Empress Kaou-how was roused to anger by the Heung-noo, when a council of ministers was held in the palace, and Fan K'wae requested the command of a hundred thousand troops to scour the country of the Heung-noo. But Ke P'oo denounced Fan as deserving death; a faithful reproof of a false adviser. The great ministers then induced her to send a letter, after which the Heung-noo complication was relaxed, and the troubles of the empire were smoothed down. Again, in the time of the Emperor Wan-te, the Heung-noo made a violent aggression on the northern border, where they remained till the imperial cavalry reached Kan-tseuen in Yung. There was a great consternation in the metropolis, and three generals were put in commission to plant military colonies at Se-lew, Keih-mun, and Pa-shang, to guard against these dangers, but after a few months they were again suspended. On the accession of Woo-te, the Ma-yeh plot was concocted, to mislead the Heung-noo, and Han Gan-kwo was put in charge of three hundred thousand troops to perambulate the country and draw them into the trap. But the Heung-noo, becoming aware of the stratagem, decamped, thus rendering nugatory the great expenditure of treasure, and wear and tear of the troops. They never got sight of one of the enemy, much less the face of the Shen-yu. After that the profoundest consideration was given to the policy adapted for the permanence of the empire, and schemes for the glory of the Imperial name. A grand levy was made of several hundreds of thousands of troops, who were kept under training by Wei Tsing and Ho Keu-ping more than ten years from first to last. Crossing the West river, they cut off the Great Encampment of the Heung-noo, routed the Teen-yen station, invaded the royal palace, and reduced the country

to the greatest extremities. The fugitives were chased to the extreme north; our General made an offering at Lang-keu-seu mountain, presented a sacrifice at the Koo-yen precipice, and went as far as the Han lake. Among the captives were more than a hundred famous princes and nobles. From that time the Heung-noo became alarmed, and were more urgent for a treaty of peace; still they were not prepared to profess their subjection. What untold wealth has been gladly spent in past ages! How have innocent men been condemned to hard service, while the thoughts of the country have been extending north to the land of Lang-wang, considering that without the preliminary fatigue there can be no protracted rest—without a short time of expenditure no lasting peace is to be secured! Thus the burden of a million of troops is endured without regret, in order to avert the mouth of the hungry tiger, or a treasury of wealth is employed to fill up a gap in the Loo-k'eu mountain. About the year B.C. 73 there were some audacious Heung-noo, who determined to plunder Woo-sun and seize the Chinese princess. An army of a hundred and fifty thousand cavalry was raised, under the command of five generals, for a hunting expedition in the south, while the Marquis of Chang-lo took fifty thousand Woo-sun cavalry to overcome them on the west, till they received hostages, and then returned. The seizures on the occasion were few; it merely excited their martial prowess, and showed the energy of the Chinese troops irresistible as the wind or lightning. Although they returned empty-handed as they went, yet they killed two generals; thus the northern barbarians were taught the lesson, that if they would not submit to China, they would not be allowed peacefully to repose on a high pillow. Towards the year B.C. 60 there was an eminent display of reformation on a grand scale, and the imperial favours were abundantly diffused. But the Heung-noo were harassed by internal turbulence, there being five contending claimants for the supremacy. The Jih-ch'uh Prince Hoo-han-seay came to China, and placed himself under its civilising influences, declaring himself a subject, and submitting to its authority. Then it became a question of bridling and restraining, as occasion might demand. After this, when he wished to attend an audience he was not repelled; when he did not wish, he was not forced. Why so? Because foreigners, being of an irate and intractable disposition, and large and robust figure, they are confident in their strength, and rely on their courage. It is difficult to lead them into the path of virtue, but it is easy to stir them up to any evil. Their stubbornness is difficult to bend; their peace is not easily secured. Hence, before they had given in their submission,

our troops were worn out by distant campaigns; the empire was desolated, its wealth was exhausted, corpses were strewed on the ground, and the soil was saturated with blood. Such is the distress incident to contest with the strong and the expulsion of enemies.

"After they are brought into subjection, they have to be soothed and appeased by intercourse and gifts: such are the necessities imposed by dignity and forbearance. Formerly we put to death the chief of the Ta-wan metropolis; we trod down the ramparts of the Woo-hwan; we examined the wall of Koo-tsang; we laid waste the arena of T'ang-tseay; we carried off the banners of Corea; and tore down the flags of the two kingdoms of Yue. The nearest of these expeditions was not over ten months' service, and the most distant occupied little short of the labours of two years. Verily we have ploughed over their palace halls, and swept away the habitations of the people, and the territories now form regions and districts of the empire. Blown away like the clouds, and rolled up like a mat, these peoples have caused no subsequent troubles. But with the barbarians of the north it is otherwise; they are in truth the formidable enemies of China. Their history from remote generations is held up for our instruction; having been treated with much consideration in past ages, they can by no means be made light of in the present. Now the Shen-yu, reverting to right feeling, and cherishing an unfeignedly sincere heart, wishes to leave his palace, and take his place at the audience before the august presence; this is a custom that has been handed down from early ages, and is favourably regarded by the spiritual intelligences. Although it may be costly to the State, it is a thing that must not be dispensed with. Why should he be repulsed as one bringing an evil influence? thus, on account of an uncertain impending event, nullifying the favours of the past, and opening up the way to a quarrel in the future. To quarrel with those who have good intentions is to gender heartfelt hatred; repudiating their former expressions, they will look to our declarations in the past, and imbibing a bitter hatred against China, will sever every connecting bond, and never more to the end will they respect the imperial presence. It will be impossible to overawe them; it will be useless to address them. What means then will be available to avert great disasters? The enlightened man sees a matter before it takes form; the intelligent man understands an affair before it is spoken about. If sincerity rules previous to the occurrence of an event, there will be no occasion to revert to the tactics of Mung Teen and Fan K'wae; nor to enact afresh the precautions of Keih-mun and Sze-lew. What occasion

would there be for the *ruse* of Ma-yeh? where would be the use of such meritorious service as that of Wei Tsing and Ho Keu-ping? and where would be scope for the valorous deeds of the five generals? But, on the other hand, when a quarrel has once broken out, though the wisest of counsellors rack their brains in the interior, and able diplomatists crowd our streets, we shall not be able to restore the previous state of equilibrium. Formerly, in planning the government of the western regions, when a protector-general of cities and villages was located in the Keu-sze country, with thirty-six kingdoms under his rule, at an annual expense to the empire of some myriads of taels, who could have calculated that Sogdiana and Woo-sun would have crossed the white dragon mound, and made a plundering incursion on the western border? Now, in governing the Heung-noo, if the laborious efforts of a hundred years are to be lost in one day—if one is to be secured at the expense of ten—it is your servant's humble opinion that this will not tend to the peace of the country. May your Majesty reflect a little on this subject, that so calamities may be averted from the people on the borders, ere the turbulence has broken out, or war has been declared!" When this memorial was presented the Emperor was aroused to a consciousness of his position. He ordered the Heung-noo envoy to be recalled, and addressed a letter to the Shen-yu, assenting to his proposal. To Yang Heung he gave fifty pieces of silk and ten pounds weight of gold. Before the Shen-yu set out, he fell sick, and sent another envoy, expressing a desire that his audience might be deferred till next year. On former occasions, when the Shen-yu came to court, he was accompanied by princes of renown and subordinates, with attendants to the number of more than two hundred in all. The Shen-yu now forwarded a despatch, saying that in reliance on the sacred intelligence of the Emperor, whose people were numerous and strong, he wished to bring five hundred men to court with him, that they might witness the glory of the Son of Heaven. The request was granted.

In the year B.C. 1, the Shen-yu came to attend the audience; but the Emperor, finding the malign influences of the year stationed in the duodenary cycle resting on his court, removed to the Grape-vine Palace in the forest garden, and gave orders that the Shen-yu was to be treated with more than ordinary consideration. The Shen-yu acknowledged the honour, and received an additional gift of three hundred and seventy coats, thirty thousand pieces of embroidered, figured, and variegated silks, thirty thousand pounds of raw silk, with other objects, the same as in 25. At the conclusion of the rites, the Inner

Gentleman-usher, General Han Hwang, was deputed to escort the Shen-yu back. Beyond the stockades, they crossed the Keu-teen-loo river, to the north of the Heu-tun settlement. With a long return journey before them, Han Hwang's party found they were running short of provisions, and were indebted to the Shen-yu for supplying their wants. Fifty days having elapsed beyond the time that they ought to have returned, the Emperor sent Ke-lew-kwan to the Shen-yu with reference to them. On the arrival of the Ke-lew-kwan at his native land, his uterine brother, the Right Great Tseay-fang, was sent to the Chinese court with his wife instead.

On the return of the latter to the Heung-noo, the Shen-yu sent the Tseay-fang's uterine elder brother, the Left Jih-ch'uh Prince Too, with his wife, to reside at the court of China. At that time, the Emperor Ping-te being very young, the regency was retained by the Empress Dowager, while the government was in the hands of Wang Mang, the Marquis of Sin-too.

Wang Mang, who was desirous to gratify the Empress, by adopting a more dignified policy than heretofore, and by the rumours in circulation, induced the Shen-yu to send Wang Chaou-keun's daughter, Seu-po Keu-seun-yun, in A.D. 5, to wait on the Empress Dowager, thus affording an opportunity for bestowing on her most munificent gifts. Just then the king of the Ulterior Ouigours, Keu-koo, and the Keu-hoo-lae * king, T'ang-tow, becoming exasperated against the Protector General and the Master Controller, decamped with their wives, families, and subjects, and rendered their submission to the Heung-noo, the details of which are given in the "Memoirs of the Western Regions." The Shen-yu received and located them on the Left Luh-le's territory. He then sent an envoy to China with a written statement of the matter, saying, "Your servant has respectfully received them." By an imperial order, the Inner Gentlemen-ushers, Generals Han Lung and Wang Chang, the Deputy Master Controller, Chin Fow, the Imperial Attendant Reporter Pih Ch'ang, and the Chang-shwuy Master Controller, Wang Heih, were sent on a mission to the Heung-noo. They told the Shen-yu that he ought not to have received the subjects of China from the western regions, and now it was incumbent on him to send them back. The Shen-yu replied: "The Emperors Suen-te and Yuen-te, in their compassion, agreed to a treaty, that from the Great Wall southward should be the imperial domain, while all north of the Great Wall should belong to the Shen-yu. Should there be any trespass on the

* This is the designation of the Cho [Keang, described by Phillips as "a people occupying the southern slope of the Nan-shan and the O-neou-ta-shan mountains."—Doolittle's "Vocabulary and Handbook," vol. ii. p. 207.

stockades, a statement of the matter was to be immediately forwarded, and if any deserters offered their submission, they were not to be received. Your servant is aware that his father, Hoo-han-seay, was the recipient of boundless favours, and when on his death-bed, he gave orders that if any Chinese came to propose their submission, they were to be refused, and immediately sent back to the stockades, in acknowledgment of the Emperor's great favours. But these are from outside nations, and we may receive them." The envoys rejoined: "The Heung-noo have recently been contending together with their own flesh and blood, till the nation had become almost extinct. Thanks to the great favours of China, the scattered remnants have become again united, women and children now live in tranquillity, and the family line is continued through successive generations, which abounding favour you ought to be ready to acknowledge." The Shen-yu, prostrating himself, confessed his error, and handed over the two chiefs as prisoners to the envoys. The Inner Gentleman-usher, General Wang Ming, was sent from China to receive them back at the boundary of the Go-too-noo country. The Shen-yu sent an envoy to escort them back to their own country, and begged that their offence might be pardoned. The envoy forwarded the request to court, but Wang Mang would not consent. He then assembled the various kings of the western regions, and beheaded the captives in their presence, as a warning.

After this a rescript of four prohibitory articles was issued, to the effect that Chinese absconding to the Heung-noo, Woo-sun subjects absconding to the Heung-noo, subjects of any of the kingdoms in the western regions, bearing the Chinese seal of investiture, tendering their submission to the Heung-noo, or Woo-hwan subjects tendering their submission to the Heung-noo, should none of them be received. The Inner Gentlemen-ushers, Generals Wang Seun and Wang Chang, and the Deputy Master Controllers, Chin Fow and Wang Tsin, were sent to negotiate these four articles with the Shen-yu, to whom they were presented in an ornamental case, for his future guidance. The Shen-yu accordingly returned to them the case, with the old treaty which had been ratified by Seu-en-te. About the same time Wang Mang memorialised the throne, recommending that dissyllabic names should not be allowed in China; and, in furtherance of this design, sent an envoy to the Shen-yu, intimating the propriety of his forwarding a despatch to signify his submission to the civilising influence of China, in using a monosyllabic name, a declaration which would certainly be rewarded by the most liberal gifts. The Shen-yu complied with the suggestion, and stated, in a document to the throne:

"Having had the happiness to become a border dependant, your servant has unfeigned delight in complying with the sacred regulations of your peaceful administration. Your servant's name was originally Nang-che-ya-sze which I have now respectfully changed to Che." Wang Mang was greatly pleased with this result, and told the Empress Dowager to send an envoy with a reply despatch, and very liberal gifts.

After the ratification of the four articles by Wang Mang, the Chinese Commissioner for the protection of the Woo-hwan informed these people that they were no longer to pay tribute of peltry and cloth to the Heung-noo. When the Heung-noo, as usual, sent an envoy to collect the Woo-hwan tribute, such Heung-noo men and women as were desirous of trading all followed the deputation. But the Woo-hwan kept them at a distance, saying, "We have received the articles of the imperial decree, by which we are not to pay tribute to the Heung-noo." The envoy was enraged, took the Woo-hwan chief, bound him, and suspended him head downwards. The brothers of the chief now gave vent to their fury, attacked the envoy, and put him and all his subordinates to death, while they seized the women, horses, and cattle. When the Shen-yu heard of this affair, he sent a deputation to the Woo-hwan, accompanied by the troops of the Left Sage Prince, to demand those who had put the envoy to death. When the Woo-hwan were attacked, they fled in all directions—some to the hills, and some to the protecting stockades in the east. The Heung-noo made a great slaughter among the men, and drove away a thousand of the women, the young and the feeble, whom they located in the left-hand land. They told the Woo-hwan: "You may bring horses and other animals, peltry and cloth, to redeem them." More than two thousand of the relatives of the captive Woo-hwan went with treasure and animals to redeem them. The Heung-noo received the ransom, but retained the bearers, and did not send back the captives.

In the year A.D. 9, Wang Mang, having usurped the imperial dignity under the style of the *Sin*, or "New" dynasty, sent a deputation to the Heung-noo, consisting of the Woo-wei General Wang Seun, accompanied by the leaders Chin Fow, Wang Leih, Chin Jaou, Pih Ch'ang, and Ting Nêë, with a large gift of gold and silks for the Shen-yu, and an edict informing him the decree of heaven had been received to supersede the house of Han; hence they had come to exchange the Shen-yu's seal. Now the old seal bore the inscription Heung-noo Shen-yu se, "Royal signet of the Shen-yu of the Heung-noo"; but the new seal sent by Wang Mang was changed to Sin Heung-noo Shen-yu Chang, "Official seal under the new

dynasty of the Shen-yu of the Heung-noo." On the arrival of the General, he handed the seal and badge to the Shen-yu, with the imperial order to return the old seal. The Shen-yu received the order with a double obeisance, and, before having it translated, he desired the old seal to be taken from its casket. As he took it up himself to hand it over, the Left Koo-seih How Soo, who was standing by his side, remarked, "You ought not to deliver it till you have seen the inscription on the new seal." The Shen-yu thereupon refused to deliver it. He invited the envoys to sit down in the grand tent, and wished first to invoke the blessings of longevity on the new dynasty. The Woo-wei General then said to him, "Now is the time to deliver the old seal and badge." The Shen-yu assented, and again took them up to hand them over, when the interpreter Soo again remarked, "You should not deliver it till you have seen the inscription on the new seal." But the Shen-yu replied, "Why should there be any change in the inscription?" He then opened out the old seal and badge, and presented them to the General. At the same time he formally received the new badge, but did not open it to look at the seal. They feasted till night, and on retiring from the entertainment, the right leader, Chin Jaou remarked to his colleagues, "The statesman Koo-seih How has already intimated suspicions respecting the inscription on the seal, and almost prevented the Shen-yu delivering it up. Now that he will have looked at the seal, and seen that the inscription is changed, he will certainly want the old seal back again, and we cannot talk him out of it. There could be no greater disgrace put upon the imperial order than to lose it after once having had it in our possession. The best thing to be done is to smash the old seal, in order to cut off the root of future troubles." The others hesitated doubtfully, and made no reply; but Chin Jaou, being a man of Yen, was impetuous in his movements, fetched a hatchet and broke the seal to pieces. Next day, indeed, the Shen-yu sent the Right Kuh-too How Tang to tell the General—"On the seal given to the Shen-yu by the Han dynasty was the word *Se*, 'royal signet,' and not *Chang*, 'official seal.' Neither had it the name of the dynasty, 'Han.' The seals of princes of the empire and their inferiors bear the dynastic name, and are called *Chang*, 'official seal.' On the present seal the word *Se*, 'royal signet,' is omitted, and the dynastic name *Sin* is added, precisely the same as on the seals of ministers and their inferiors. The Shen-yu wishes the old seal back." The General, showing him the old seal, said: "The new house is making laws in compliance with the dictates of heaven. We have broken up the old seal, as having simply been made at

the option of a general. Let the Shen-yu acknowledge the decree of heaven, and accept the laws of the new house." When Tang carried back an account of his interview, the Shen-yu saw that he could do nothing effectual in the matter. Moreover, being mollified by the abundant gifts he had received, he sent his younger brother, the Right Sage Prince Yu, to accompany the General back to China, with a presentation of horses and oxen, to return thanks for favours received. He took occasion also to forward a despatch, asking for a renewal of the old seal. On the General's return, when he reached the territory of the Left Le-han Prince Heen, seeing great numbers of the Woo-hwan people, he inquired of Heen about them. The latter related all the circumstances, upon which the General observed: "Formerly you received the four articles, by which it is forbidden to receive subjects from the Woo-hwan; they must be immediately sent back." Heen requested permission to communicate particularly with the Shen-yu on the subject of sending them back. The latter, in his reply to Heen, inquired if they were to be sent inside the stockades or outside. The General, unwilling to decide on his own responsibility, reported the matter to the capital, and received the order in reply, that they were to be sent to the outside of the stockades. The Shen-yu, having first been partially alienated from China by the request of land made by Hea-how Fan, the feeling was aggravated by the misunderstanding regarding the Hoo-hwan people, who had been captured in a raid, in consequence of their refusal to pay tribute; and now he had become still more enraged on account of their altering his seal. With these feelings, he sent the Right Great Tseay-keu Poo-hoo-loo-tsze, and more than ten other men of rank, with ten thousand cavalry, as it were to escort the Woo-hwan. These collected their troops outside the Suh-fang stockade, and the governor of Suh-fang reported the matter to court.

Next year the King of the Ulterior Ouigours, Seu-che-le, was planning his submission to the Heung-noo, when the Protector-General, Tan Kin, put an end to his schemes by beheading him. Seu-che-le's elder brother, Hoo-lan-che, after that collected over two thousand people, and, driving off the domestic animals, the whole nation absconded in a body, submitted to the Heung-noo, and were received by the Shen-yu. Hoo-lan-che then joined the Heung-noo in a plundering incursion and attack upon the Ouigour country, when they killed the ruler of the Ulterior metropolis, wounded the Protector-General's Master of the Horse, and returned to the Heung-noo country. At the same time the Woo-ke Master Controller's officials, Chin Leang and Tsung Tae, the Aide-de-camp Han Heuen, the

Right Keuh-how Jin Teih, and others, seeing the western regions in a state bordering on revolt, and hearing that the Heung-noo were proposing to make a grand invasion, became seriously apprehensive for their own safety. Forming a plot together, they captured by force several hundreds of the military guard, put to death the Woo-ke Master Controller Teau Hoo, and sent messengers to the Heung-noo, who communicated with the South Le-han Prince and the South General. The Heung-noo South General entered the western regions with two thousand cavalry, where he met Chin Leang and his confederates, and, uniting their whole force, they captured more than two thousand of the Woo-kee Master-Controller's guards and people, male and female, whom they took to the Heung-noo country. Han Heuen and Jin Teih remained in the vicinity of the South General, Chin Leang and Tsung Tae passed over to the Shen-yu's palace, while the people were distributed over the cultivable lands along the banks of the Ling-woo river. The Shen-yu gave Chin Leang and Tsung Tae the title of Woo-hwan, field-marshal, and frequently invited them to his table. The Protector-General of the western regions, Tan Kin, forwarded a despatch to China, stating that the Heung-noo South General, and the Right E-ts'ew-tsze, with a large body of followers, had made a plundering attack on the kingdoms in the west. Wang Mang thereupon divided the Heung-noo into fifteen sections, to be placed under so many Shen-yus.

In the year A.D. 11, the Inner Gentleman-usher, General Lin Paou, and the Deputy Master Controller, Tae Keih, were sent with ten thousand cavalry, and a mass of rare and valuable presents, to the Yun-chung stockade, to allure the descendants of Hoo-han-seay Shen-yu. Wishing to place them all successively in office, he sent an interpreter beyond the stockade to induce the Right Le-han Prince Heen to respond to the call. Heen came with his sons, Täng and Tsou, and they were all installed in office. Heen was appointed Heau Shen-yu, and received gifts of a private carriage, a military carriage, a thousand pounds weight of gold, a thousand pieces of various silks, and ten battle halberds. Tsou was appointed Shun Shen-yu, with a gift of five hundred pounds weight of gold. Tsou and Täng were escorted to Chang-gan. Wang Mang appointed Lin Paou as Duke of Seuen-wei, and promoted him to be Tiger's-teeth General, while Tae Keih was made Duke of Yang-wei, and promoted to be Tiger's-courage General. When the Shen-yu heard of these things, he exclaimed in rage: "My ancestor received unspeakable favours from the Emperor Seunte; but the present occupant of the imperial throne is not a descendant of Seuen-te. What right has he to be there?"

He then commissioned the Left Kuh-too Marquis, the Right E-ts'ew-tsze Prince Hoo-loo-tsze, and the Left Sage Prince Lo, who entered the Yih-show stockade in Yun-chung with troops, and made a great slaughter among the guards and people. After that, at various times, he encouraged the Right and Left Divisional Commandants, and the Border Land Princes to enter the stockades on plundering raids. The largest of the bands consisted of more than ten thousand, those of secondary importance numbered several thousands, while there were smaller bands of only a few hundreds. They killed the Governors and Commandants of Yen-mun and Suh-fang, and carried off the guards, people, and animals innumerable, till the borders became utterly abandoned. Wang Mang, having but recently assumed the imperial authority, sought to impart a dignity to his reign, in reliance on the wealth of the treasury. He appointed twelve Divisional Leaders, made a levy of the most courageous troops from the different kingdoms, and picked soldiers from the military depôts, which were placed in military colonies, to be drafted off to the border. The intention was to collect an army of three hundred thousand, and having prepared provisions for three hundred days, to issue simultaneously by ten different roads, and pursue the Heung-noo to the last extremities, till they were driven back upon the Ting-ling, and then divide the land among fifteen of the descendants of Hoo-han-seay. At this juncture Wang Mang's General, Yen Yew, laid the following remonstrance before the throne: "Your servant has learnt that the Heung-noo are a trouble of very old standing, but he has not heard that it was thought necessary, in remote ages, to send troops against them. In later times the Chow, Tsin, and Han undertook to subdue them, but their policy was not of the highest order. The Chow acted on a second-rate policy, the Han was guided by a policy of the lowest kind, and the Tsin cannot be said to have had any policy at all. In the time of Seu-en-wang of the Chow, the Hen-yun invaded the inner land as far as King-yang;* but a General having been commissioned to subjugate them, he succeeded in completely expelling them from the country. An invasion by the barbarians from the north or west may be compared to the pest of mosquitoes, which can only be driven away. Hence the empire got a reputation for intelligence; and this was a policy of a medium character. Woo-te of the Han selected his generals and trained troops, made preparation of light provisions, and penetrated far in among the distant barbarian tribes. Although merit was obtained by conquest

* A district in the present prefecture of Se-gan in Shen-se province, the city being in N. lat. $34^{\circ} 30'$, E. long. $108^{\circ} 45'$.

and capture, the Hoo immediately retaliated, and for more than thirty years there was a continuous succession of military calamities. The resources of China were reduced, and the Heung-noo were cut down. The empire attained a military reputation; but this was the lowest order of policy. The Emperor Che of the Tsin could not bear disgrace, and, lightly using up the strength of the people, built the Great Wall for security, extending a distance of ten thousand *le*. He also opened up ways for the transport of taxes, from the sea-coast to the uttermost extremities of the land. When the work was completed, China was exhausted within, and the spirits of the land and grain were neglected. This could not be considered a policy at all. Now the empire is on the verge of the *Male nine** tribulation, and approaching a year of famine, which will be still more severe for the north-western border. To make a levy of three hundred thousand troops, with provisions for three hundred days—if the ocean and Tae-shan mountain may be brought from the east, and the Keang and Hwae rivers be collected from the south, then, indeed, adequate provision may be made. If we reckon the distance of the way, a year will not be sufficient to effect the gathering. The soldiers who are first on the ground, being brought into close quarters, disturbances will break out. Some of the troops being old, and the weapons worn out, will both be unfit for use; which is the first difficulty.

"The borders being now deserted, no provisions for the army can be procured thence, and there is no mutual interdependence between the various regions and states, by which the wants of the one may be supplied from the fulness of the other; which is the second difficulty.

"If we reckon the consumption per man for three hundred days at eighteen bushels of dried rice, such a weight will require oxen for the transport; and then the food for the oxen must also be provided, which will be an additional weight of twenty bushels. The Hoo land is for the most part sandy and salt, with scarcity of water and herbage, as we know from past experience; and before the army has been out a hundred days the oxen will all die out, while the quantity of provisions still left will be more than the men can carry; which is the third difficulty.

"The Hoo country is very cold in the autumn and winter, and exposed to high winds in the spring and summer, which would necessitate a vast amount of pots and boilers, firewood and charcoal—a weight that would be utterly unmanageable. There would be a want of dried food, and water to drink, and

* An allusion to the occult doctrine of the numbers in the *Yih-king*. The period of the memorial was the *eighth* year of the sexagenary cycle.

the cares consequent on sickness and epidemics among the troops. On this account, the Hoo of past ages, with every precaution to preserve their strength, were obliged to succumb within a hundred days; which is the fourth difficulty.

"The baggage waggons that accompany the army are rarely light and springy, and cannot go with rapidity. Captives might escape very leisurely, and we should not be able to overtake them. If we had the good fortune to meet with captives, and tied them to the baggage waggons, there are dangerous and precipitous places on the road, where horses must follow each other in single line, and the prisoners would have to be detached before or behind, which would be incalculably hazardous; and that is the fifth difficulty.

"In thus extensively using up the strength of the people, there will be no opportunity for signalling their merit. Your servant would humbly express his concern about the matter. But now, since the troops have been raised, let those who first arrive be sent off. Let your servant and others proceed far into the country, come down upon them with an overwhelming onset, and thus effectually chastise the Hoo."

Wang Mang would not listen to Yen Yew's remonstrance, but continued to furnish grain to the troops as before, which gave rise to a great commotion through the empire. When Heen had received the title of Heaou Shen-yu from Wang Mang, he galloped off beyond the stockades, returned to the palace of the Shen-yu, and related the whole affair to him. The Shen-yu thereupon appointed him to the petty Heung-noo dignity of Marquis of Yu-suh-che-che. After that Tsou fell sick and died, when Wang Mang appointed Täng to succeed him as Shun Shen-yu. The Distress Removing General, Chin Kin, and the Barbarian Daunting General, Wang Seun, established a military colony at Kō-seay stockade in Yun-chung. About the same time the Heung-noo made several raids on the border, killed the general and guards, took captive the people, and drove off great numbers of their animals. The captives who had been taken by the Chinese were questioned regarding these movements, and all affirmed that it was Kēu, the son of the Heaou Shen-yu Heen, who had been the leader in the raids. The two Generals reported the same to the court.

In the spring of the year 12, Wang Mang assembled all the barbarians in the capital, and in their presence beheaded Tang, the son of Heen, publicly in the market-place. From the time of Seuen-te, for several generations, the country had not been startled by beacon fires on the northern borders, the dwellings of the people were numerous, and horses and oxen were scattered over the country. But when Wang Mang excited

turbulence among the Heung-noo, and got involved in difficulties with them, the people were reduced by death, and carried off into captivity. The troops of the twelve divisions having been long settled in their colonies without being called out, and the guards being suspended or worn out, for several years the border lands had been an abandoned desert, covered only by bleached bones.

Towards the end of A.D. 13, Woo-choo-lew Shen-yu died, in the twenty-first year of his reign. The great minister of the Heung-noo legislature, the Right Kuh-too Marquis, Sen-po Tang, the husband of Wang Chaou-keun's daughter, E-mih Keu-seun-yun, was desirous of cementing a peace with China; and having been on very intimate terms with Heen, observing the honours put upon him from first to last by Wang Mang, he passed over Yu, and set up Heen as Woo-luy Jö-te Shen-yu. On the accession of Heen, he made his younger brother Yu the Left Luh-le Prince. Woo-chow-lew Shen-yu's son, Soo-too-hoo, was originally Left Sage Prince, while the same monarch appointed his own younger brother, Loo-hwan, son of the Tóo-ke consort, as Right Sage Prince. During the lifetime of Woo-chow-lew, several successive Left Sage princes had died; when, considering the title an infelicitous one, he commanded it to be altered to that of Hoo-yu. The title Hoo-yu indicated the most honourable rank, such as entitled the bearer to succeed to the dignity of Shen-yu. Hence Woo-choo-lew Shen-yu gave it to his eldest son, implying that he was heir-apparent. But Heen having been incensed against Woo-choo-lew Shen-yu, for having degraded his own title, was unwilling that the dignity should pass to Soo-too-hoo, and degraded him to the rank of Left Tóo-ke Prince. Yun Tang then urged Heen to get a treaty of peace with China.

In the year 14 Yun Tang sent people to the Che-loo stockade at Hoo-mang, on the *Se-ho*, or "West River," who informed the officer at the stockade that they wished to see the Ho-tsin Marquis. Wang Heih, the Ho-tsin Marquis, was the son of Wang Chaou-keun's brother. The Middle Division Commandant reported the matter to the court. Wang Mang then sent Wang Heih and his younger brother, the Cavalry Commandant Marquis of Chen-tih Sa, on a mission to the Heung-noo, to make congratulatory presents on occasion of the new Shen-yu's accession, consisting of gold, clothing, and silk stuffs. They mendaciously told the Shen-yu that his resident son Tang was still alive, and on the strength of that tried to induce him to give up Chin Leang, Tsung Tae, and the others. The Shen-yu in consequence took these four men, and the villain Che Yun, who had killed the Master Controller, Teau Hoo,

with his own hand, with their wives, children, and subordinates, twenty-seven persons in all, whom he put in fetters and delivered to the envoys. Wang Heih and Wang Sa were escorted by the Choo-wei Koo-seih, Prince Foo, and others, to the number of forty persons. Wang Mang then introduced the bonfire punishment, by which Chin Leang and the others were put to death. He then suspended the general leaders and the military colony troops, and appointed ambulating guard commandants. The Shen-yu coveted Wang Mang's gifts, and hence he conformed outwardly to the old Chinese institutions; but secretly he profited by the raids and seizures. On the return of his envoys, becoming aware that his son Tang had been formally put to death, he was filled with rage and hatred, and the raids and captures were carried on unceasingly from the left-hand land. The envoys heard the Shen-yu invariably stating: "The Woo-hwan have combined with some disreputable Heung-noo people to carry out raids on the stockades, just the same as the thieves and robbers in China. When I first acceded to the supreme power, I found the national dignity and good faith at a low ebb, and have exerted all my strength in trying to put a stop to the disorders, not daring to act with duplicity."

In the fifth month of the year 15 Wang Mang again sent Wang Heih and the Woo-wei General Wang Keen, with the leaders Fuh Gan, Ting Nêë, and others, six in all, to escort the Right Choo-wei Koo-seih Prince. On that occasion the bodies of the resident Prince Täng and the nobles of his suite, who had been decapitated, were conveyed to the stockade in common carriages, where the Shen-yu sent Yun Tang's son, the Baron and Great Tseay-ken Chay, and others, to meet them. When Wang Heen arrived with his party, he made great presents of gold and valuables to the Shen-yu, and in virtue of an imperial edict, changed the designation *Heung-noo*, or "Savage slaves," to *Kung-noo*, or "Respectful slaves," and the title *Shen-yu*, or "The Single one," to *Shen-yu*, or "The Good one." A new seal and badge was conferred on him; the Kuh-too Marquis Tang was created Duke of How-gan, and Tang's son, the Baron Chay, was made Marquis of How-gan. The Shen-yu, who coveted Wang Mang's gold and silks, gave a deceitful compliance with these proceedings, but at the same time continued his raids and robberies as before. Wang Heen and Wang Heih gave to Yun Tang the money stipulated for delivering up Chin Leang and the others, to convey to the Shen-yu. In the twelfth month they returned within the stockade, when Wang Mang was greatly delighted, and conferred on Wang Heih two millions cash, while Fuh-gan and the others were all promoted.

In A.D. 18, the Shen-yu Heen died, in the fifth year of his reign, and was succeeded by his younger brother, the Left Sage Prince Yu, under the style of Hoo-too-urh-she Taou-kaoa Jō-te Shen-yu. *Jō-te*, in the Heung-noo language, is the equivalent of the Chinese *Heaou*, or "Filial." Since the time of Hoo-han-seay, the Heung-noo having been in intimate alliance with China, they observed that the Chinese used the word *Heaou* in the imperial title, and wishing to imitate the custom, inserted the word *Jō-te* in the title of every Shen-yu. As soon as Hoo-too-urh-she Shen-yu Yu had assumed power, his covetous desire for the imperial gifts was manifest. He sent the Great Tseay-keu Chay, with the Prince of He-tuh Keu, the son of Tang-hoo Keu-seun, the junior of the Yun sisters, to present offerings at court. When the mission was about to return, Wang Mang sent Wang Heih, the Marquis of Ho-tsin, to accompany Chay's party. On their arrival at the Che-loo stockade, they were met by Yun Tang, who was then compelled by the military to go to Chang-gan. Yun Tang's youngest son, the Baron, made his escape when outside the stockade, and returned to the Heung-noo.

Arrived at Chang-gan, Yun Tang was promoted by Wang Mang, in A.D. 19, to the dignity of Sen-po Shen-yu, the usurper's intention being to send a large army to instal him and support his claim; but the troops could not be got to act in concert, while the Heung-noo became still more irritated, and made simultaneous incursions on the northern borders. The consequence was that the northern borders were utterly desolated. Yun Tang fell sick and died. Wang Mang gave his junior daughter Luh-luh in marriage to Chay, the Duke of How-gau, an extreme mark of the most honourable favour; and eventually he wished, by military power, to establish him as the Shen-yu. In 22, Wang Mang was put to death by the Chinese troops, and Yun Chay died soon after.

In the winter of 24, the Chinese sent the Inner Gentleman-usher, General Wang Sa, the Marquis of Kwei-tih, and the Grand Master of the Horse and Military Protector, Chin Tsun, on a mission to the Heung-noo, to restore to the Shen-yu the original seal and badge of the Han, and also the seals and badges of the princes, marquises, and subordinates. On the same occasion they escorted back the surviving relatives, dependants, and suite, of Yun Tang. But the Shen-yu Yu haughtily remarked to Wang Sa and Chin Tsun: "Originally the Chinese and Heung-noo were as brethren, but when internal disturbances arose among the Heung-noo, the Emperor Seuen-te assisted in establishing Hoo-han-seay Shen-yu. Hence, in order to give due honour to China, he declared his submission as a

subject. But now a state of anarchy has taken place in China, Wang Mang having usurped the supreme power, when the Heung-noo also sent troops to attack him, and have devastated his border land, causing a great consternation throughout the empire. The thoughts of the people have reverted to the Han, Wang Mang has been killed, his cause overthrown, and thus through our means the Han has been re-established. Now we ought to be treated with greater honours." Chin Tsun reasoned the matter, but the Shen-yu maintained his position to the end. On returning to Chang-gan in the summer of 25, the envoys found Kang-che* had been defeated, and the Red eyebrow insurgents were in possession.

REFLECTIONS ON THE ABOVE MEMOIR.†

The *Shoo king* contains a warning regarding "the barbarous tribes who disturb our bright great land."‡ The *She king* speaks of "dealing with the tribes of the west and north."§ The *Ch'un ts'ew* signifies that the roads had been long held against the barbarians. These allusions all point to the miseries inflicted by the barbarian hordes. Hence, from the accession of the Han, every loyal and talented minister has had a scheme to propose, as is evidenced by the thick-set mementoes in the Confucian temple. In the reign of Kaou-tsoo, there was Lew King; in the time of the Empress Lew-how, there were Fan K'wae and Ke Poo; during the reign of Heaou Wän-te, there were Kea E and Chaou Ts'o; in the reign of Heaou Woo-te, there were Wang K'wei, Han Gan-kwö, Choo Mae-shin, Kung-sun Hung, and Tung Chung-shoo;—all holding their individual views, differing more or less from each other. But they may all be referred to two categories: literary men of the gentry class hold to the idea of peace and amity, while members of the warrior class always talk of invasion. Both these are partial in their views, merely looking to the exigencies of the moment, and not taking into account the whole history of the Heung-noo. From the commencement of the Han dynasty to the present time, the flight of generations and the lapse of years exceed those of the period of the *Ch'un-ts'ew* classic. Sometimes the Heung-noo have been treated with urbanity, according

* After the death of Wang Mang a Chinese general, named Lew Heuen, was placed on the throne, with the epithet Kang-che (*Inceptus de novo*), but he retained the position little more than a year.

† Down to the year B.C. 97, the preceding memoir seems to have been copied from the *She-ke*, the work of Sze-ma Tseen. The subsequent portion is probably compiled from contemporary State documents. The section that now follows is the composition of Pan Koo, the author of the *Han-shoo*, and gives his own views on what precedes.

‡ See Legge's "Chinese Classics," vol. iii. Pt. 1, p. 44.

§ *Ibid.*, vol. iv. Pt. 2, p. 626.

to the bonds of peace and amity; sometimes they have been subdued and kept under with the severity of martial rigour. Sometimes they have humbly accepted positions in the imperial service; sometimes they have been awed into subjection, and sustained as subjects. They have been exposed to the changes of contraction and expansion; they have experienced the reverses of strength and debility; so that we are now in a position to speak of their circumstances in detail.

The earliest proposal of a treaty of peace was made by Lew King. At that time the empire had recently recovered from its disasters, when fresh troubles supervened in the affair of Ping-ching. Hence his advice was followed, a treaty of peace was ratified, and gifts were presented to the Shen-yu, in the hope of securing tranquillity in the border lands. In the time of Heaou Hwuy-te and Kaou-how, the same policy was followed up without intermission; still the Heung-noo raids and robberies did not cease or diminish, and the Shen-yu, on the contrary, became still more arrogant. Heaou Wän-te opened markets for them at the barriers, gave a Chinese princess in marriage to the Shen-yu, and increased the gifts by a thousand taels per annum. Yet the Heung-noo often broke the treaty, and the border lands were frequently devastated by them. Hence, in the middle of his reign, Wän-te, startled from his repose, roused his energy, and went forth in person to the subjugation of the barbarians. Mounting his horse, and accompanied by strong and able troops, selected from the best families throughout six regions, he practised equestrian archery in the neighbouring forest, and discoursed on keeping up the military training. He collected the choicest troops throughout the empire, formed an army at Kwang-woo, and made inquiries of Fung T'ang. While talking together about the General Commanders, he heaved a heavy sigh as he thought of the ancient famous ministers. Here, then, we see the clearest evidence of the inefficacy of treaties of peace. Tung Chung-shoo, with the experience of four generations, still wished to adhere to the ancient policy, and rather to strengthen the bond. He said: "The superior man is influenced by right principles, but the covetous man is moved by the desire of gain. As for the Heung-noo, it is useless to talk to them about benevolence and right feeling; speak to them of large gains, as the only means by which they can be bound in the sight of heaven. Therefore give them great gains to annihilate their opinions; form a contract in the sight of heaven, in order to strengthen the bond, and take their beloved sons as hostages, in order to have a control of their hearts. Although the Heung-noo are changeable and restless, yet they will never forego heavy gains; they

will not deceive high heaven; they will not kill their beloved sons. Now, to collect taxes and send presents is much less expensive than maintaining the threefold army; the ramparts of a city are not a greater security than an honest man's bond. And will it not be a great blessing to the country when, among the people of the border cities that defend the boundaries, the adults can move about free from apprehension and care, while the children are quietly nourished by their mothers; when no outlandish horsemen are prowling about the walls, and when no urgent despatches are flying through the empire?"

Let us look at Tung Chung-choo's proposals. If we examine their operation, we find they do not meet the exigencies of the time being, and are manifestly insufficient in view of the future. In the time of Heaou Woo-te, although they were invaded and attacked, defeated and captured, yet the loss of men and horses on both sides was about equal. Although the open country south of the Yellow River was cleared, and the Suh-fang region settled, yet more than nine hundred *le* north of Tsaou-yang was abandoned. Whenever any of the Heung-noo people came to tender their submission to China, the Shen-yu immediately retaliated by retaining the Chinese envoys. Such being their fierce and intractable spirit, was it likely they would send their beloved sons as hostages? Thus we see, then, that these proposals do not meet the exigencies of the time being. If hostages are not given, then treaties of peace are but empty forms. Witness the sad experience of Heaou Wän-te in the past, when the deceitfulness of the Heung-noo was ever becoming aggravated. Now, if functionaries are not selected for the border cities, to preserve the boundaries, and superintend military operations; to repair roads and embankments; to provide requisites for the stockades; to keep the halberds and cross-bows in efficient order, that so we may rely on our own resources in dealing with the border bandits;—but if, on the contrary, we make a point of raising taxes among the people, to send valuable presents to distant lands; if we flay and oppress the citizens of the empire, in order to make offerings to plundering enemies, believing in fair words while we hold an empty treaty;—how, then, shall we prevent outlandish horsemen incessantly prowling about? When Heaou Seu-en-te came into power, the Heung-noo were kept within bounds by the valorous prestige of Woo-te's impetuous attacks. In the course of a century they had become reduced almost to extinction by internal strife, when, by the judicious application of the power we had attained, they were overawed by the imperial dignity. After this the Shen-yu, prostrating himself before the throne, tendered his submission as a subject, and sent his son as a hostage. For three generations they held the position

of border dependants, and were received as guests at the Chinese court. At that time the border cities were closed in peace, and the cattle and horses were scattered over the plains. For three generations the inhabitants were not alarmed by the barking of dogs, and the people had become unused to military weapons. But about sixty years after this Wang Mang usurped the throne, and there was a commencement of border quarrels. From that occasion the anger of the Shen-yu was excited, and he cut off his connection with the empire. Wang Mang then decapitated his son, the hostage, and the border calamities supervened. Hence, when Hoo-han-seay first paid court to China, while the Chinese were deliberating about the etiquette, Seauou Wang-che said: "When the barbarians from the north and west inhabiting the wild domains say they have come to tender their submission, it is but a spasmodic and unreliable movement, coming and going without rule; they should be treated with the etiquette due to guests, yielding complacently, but not acknowledging them as subjects; then should they at a future time abscond and conceal themselves, if in China they will not be considered rebellious subjects."

In the time of Heaou Yuen-te, the question was discussed of suspending the guard for the defence of the stockades, when How Ying gave a decided negative to the proposal. This illustrates the principle that in the time of prosperity we must not overlook the possibility of decay; in the time of peace we must think of impending danger, and get an intelligent perception of minute causes while the consequences are still in the distant future. As to the Shen-yu Heen, he abandoned his beloved son, and, blinded by avarice, he overlooked the many myriads of booty obtained by invasion and capture, while the gifts consequent on a treaty did not exceed a thousand taels. Where, then, is the doctrine that they will not abandon their hostages, nor relinquish heavy gains? This is the weak point in Tung Chung-shoo's reasoning.

Now, in deliberating on the course of events, if we do not take into account the security of all coming generations, and blindly rest only upon the existing aspect of affairs, such a policy is not calculated to endure. As to the merit of invasion and defeat, referring to the transactions of the Tsin and Han dynasties, the words of Yen Yew are much to the point:—"Therefore the former kings, in measuring out the land, put the imperial territory in the centre; they divided the country into nine departments; they arranged the five outside tenures, and appointed the tribute of stock and soil; they established laws for the inner and outer nations, penal administration was fixed, and civilising influences diffused, applicable respectively to the nearer or more remote regions. Thus, according to the

Ch'un ts'ew classic, inside was the Chinese empire and outside were the barbarous nations. The barbarians are covetous and greedy of gain; their hair hangs down over their bodies, and their coats are buttoned on the left side.* They have human faces, but the hearts of beasts; they are distinguished from the natives of the empire both by their manners and their dress; they differ both in their customs and their food, and in language they are mutually unintelligible. They live retired among the northern hills and the secluded deserts, leading their flocks wherever pasture is to be found. Hunting is the business of their life. Divided from each other by the hills and valleys, and isolated by the sandy desert, nature has placed a geographical separation between the inner and outer nations. On this account the ancient sage kings treated them like birds and beasts; they did not contract treaties, nor did they attack them. To form a treaty is simply to spend treasure and be deceived; to attack them is merely to weary out the troops and provoke raids. Their country cannot be cultivated for food; their people cannot be encouraged as subjects. Thus the outer are not to be brought inside; they must be held at a distance, avoiding familiarity. Administrative instruction will not affect these people, the New-year's audience will not be attended by these nations. When they come, they are to be restrained and controlled; when they go, precautions and defence must be attended to. If they show a leaning towards right principles, and present tributary offerings, they should be treated with a yielding etiquette, but bridling and repressing must never be relaxed, ever conforming to circumstances. Such was the constant principle of the sage monarchs in ruling and controlling the barbarian tribes."

MARCH 9TH, 1875.

SPECIAL GENERAL MEETING.

(At Seven o'clock.)

Colonel A. LANE FOX, *President, in the Chair.*

The Director read the circular convening the meeting as follows:—

*Anthropological Institute of Great Britain and Ireland,
4, St. Martin's Place, W.C., Feb. 23rd, 1875.*

SIR,—I have to inform you that a General Meeting of the Members of the Institute will be held here on the 9th of March,

* The coats of the Chinese are always buttoned on the right side.

at Seven o'clock p.m. precisely (previous to the Ordinary Meeting of that evening), for the following purposes:—

"1. To consider, and if deemed advisable to authorise, an application to the Board of Trade for a license to the Institute, under s. 23 of the Companies' Act, 1867.

"2. To consider, and if deemed advisable to adopt, the Draft Memorandum and Articles of Association prepared for the incorporation of the Institute, under that Act, subject to any modification the Counsel to the Board of Trade may advise.

"3. To consider, and if deemed advisable to adopt, a new Regulation or Article, defining that words used in the Regulations or Articles importing the masculine gender shall include the feminine, and words importing the singular number, the plural; and that where any office of the Institute is filled by more than one person, any of the duties of such office may be performed by either of such persons."

The Members are desired to observe that the above proposition involves the admission of Ladies as Members of the Institute. In the event of their adopting it, it will be proposed to provide also, that the Council may declare any Meeting of the Institute open to male Members only.—I am, Sir, yours faithfully,

E. W. BRABROOK, *Director*.

Mr. F. G. H. PRICE moved, and Mr. J. CAMPBELL, R.N., seconded, the following resolution:—"That Ladies be admitted as Members of the Institute." After a prolonged discussion, the motion was carried by a majority of six votes.

Professor HUGHES moved, and Mr. CHARLESWORTH seconded, the resolution, "That no distinction be made between the memberships of the sexes." Carried by a majority of twelve votes.

On the motion of Mr. BRABROOK, seconded by Sir DUNCAN GIBB, the resolutions relating to the Articles of Association were carried unanimously.

ORDINARY MEETING.

(At Eight o'clock.)

Colonel A. LANE FOX, *President, in the Chair*.

The minutes of the last Ordinary Meeting were read and confirmed.

The following new members were announced:—The Hon. Sir ARTHUR H. GORDON, Governor of Fiji; BERTRAM F. HARTSHORNE, Esq., Iver, Uxbridge; and C. CZARNIKOW, Esq., Mitcham.

The following list of presents was read, and the thanks of the meeting were voted to the respective donors thereof:—

FOR THE LIBRARY.

From the EDITOR.—*Revue Scientifique*. Nos. 33, 34, 35, and 36, 1875.

From the EDITOR.—*Nature* (to date).

VOL. V.

G

From the REGISTRAR-GENERAL of New Zealand.—Statistics of the Colony of New Zealand for 1873.

From the ASSOCIATION.—Journal of the East India Association.

From the SOCIETY.—Proceedings of the Royal Society. Vol. XXIII. No. 158.

From the SOCIETY.—Journal of the Royal Geological Society of Ireland. Vol. XIV. Part 1.

From JAMES BURNS, Esq.—Human Nature, Nos. 88, 93, 94, and 95.

From the EDITOR.—Materiaux pour l'Histoire Primitive et Naturelle de l'Homme. Vol. V. No. 10.

From the SOCIETY.—Journal of the Asiatic Society of Bengal. Parts 1 and 2, No. 3.

From the ASSOCIATION.—Proceedings of the Geologists' Association. Vol. IV. No. 1.

From the SOCIETY.—Proceedings of the Liverpool Literary and Philosophical Society. Vol. XXVIII.

The following paper was read by the author :

ULTRA-CENTENARIAN LONGEVITY. By Sir G. DUNCAN GIBB, Bart., M.A., M.D., LL.D., Physician to Westminster Hospital.

It has been my good fortune to bring before the notice of the British Association at Edinburgh, in 1871, and at Bradford, in 1873, nine examples in which I had examined persons who had attained the golden age of one hundred years,* who furnished information of the highest physiological and social interest. As doubts have been thrown of late years upon the actual possibility, or, at least, probability of reaching to such a great age, special care was taken to ascertain the correctness of the date of the births of the persons submitted to the notice of the Association, so that their value could not be called in question. If that were necessary for centenarians who had overstepped the century by from two to four years, it became doubly so in an instance now to be brought forward, where the truly exceptional age of 111 years was reached. At first sight this might seem to be extraordinary, but to show that it is not so, my excellent friend, Mr. Henry Rance, of Cambridge, has furnished me with some tables, which he has been at great pains to compile, in which even that age is shown to be by no means uncommon, and has been occasionally exceeded. If these tables are analysed, we find they represent eighty-four examples of persons who have lived to reach an age between 107 and 175. These, again, are divided into three series, and form three distinct tables—Nos. 1, 2, and 3.

* See also "Journal of Anthropological Institute" for April, 1872, and *Medical Times* of 20th June, 1874.

ULTRA-CENTENARIAN LONGEVITY.
TABLE I.—INSTANCES SELECTED FROM VARIOUS SOURCES PRIOR TO 1800.

YEAR.	NAME.	AGE.	YEAR.	NAME.	AGE.
1759	Don Cameron	130	1772	Mrs. Clum	138
1766	Jno. Deasomer	130	1766	Thomas Dobson	139
1766	George King	130	1785	Mary Cameron	139
1767	John Taylor	130	1732	William Leyland	140
1774	William Beattie	130		Countess of Desmond	140
1778	John Watson	130	1770	James Jands	140
1780	Robert M'Bride	130	1778	Swarling (a monk)	142
1780	William Ellis	130	1773	Chas. M'Finlay	143
1764	Eliza Taylor	131	1757	John Effingham	144
1775	Peter Garden	131	1782	Evan Williams	145
1761	Eliza Merchant	133	1766	Thomas Winsloe	146
1772	Mrs. Keith	133	1772	J. C. Drakenberg	146
1767	Francis Ange	134	1652	William Mead	148
1777	John Brookey	134	1768	Francis Confi	150
1714	Jane Harrison	135	1542	Thomas Newman	152
1759	James Sheile	136	1656	James Bowels	152
1768	Catherine Noon	136		Henry West	152
1771	Margaret Foster	136	1648	Thomas Damme	149
1776	John Mariat	136	1670	Henry Jenkins	169
1772	J. Richardson	137	1635	Thomas Parr	152
1793	— Robertson	137	1762	A Polish peasant	157
1757	William Sharpley	138	1797	Joseph Surrington	160
1768	J. M'Donough	138	1668	William Edwards	168
1770	— Fairbrother	138	1780	Louisa Truxo	175

TABLE II.—PERSONS WHO HAVE DIED OF LATE YEARS.

YEAR.	NAME.	AGE.	YEAR.	NAME.	AGE.
1821	Cato Overing (a Black)	110	1823	A woman in Finland... ..	115
1823	Ellen Tate	110	1818	Ann Smallwood	116
1823	Mrs. Ormsby	110		Alex. Campbell	117
1823	Mr. J. Larling*	110	1822	A female slave (Jamaica)	120
1808	Col. J. Stewart	111	1822	T. Gilbert	120
1820	Bridget Byrne	111	1822	J. Woods	122
1822	Joseph Mills	111	1818	David Ferguson	124
1823	J. Mackensie	111	1822	Thady Doorley †	
1821	Ann M'Rae	112	1821	Marg. Darby (a Black)	130
1822	Samuel Welch (an American) †	112	1822	Lucretia Stewart	130
1818	Thomas Botwell	113	1819	Roger Hope Elliston (a Negro)	140
	William Napier	113	1820	Solomon Nibet	143

* He left 130 children and grandchildren.

† His father was near 90, his mother 100, a sister 100, and brother upwards of 90.

‡ This person was married, when 107 years of age, to a woman aged 31.

TABLE III.—PERSONS LIVING IN THE SEVERAL YEARS SET AGAINST THEIR RESPECTIVE NAMES.

YEAR.	NAME.	AGE.	YEAR.	NAME.	AGE.
1821	A widow, named Miller, at Lynn	107	1822	Felix Buckley, Esq. ...	113
1823	John Macdonald	108	1818	At Charleston, a Negro	118
1818	John Dorman, Stra- bane, Ireland	109	1823	A female in Calabria...	125
1820	At Adria, in Lombardy, a Catholic priest ...	110	1819	Henry Francisco (an American)	130
1823	Peter Grant (a High- lander)	110	1819	At Lake Champlain, a German †	135
1821	At Ballyragget, Michael Brennan *	112	1821	At Fresneen, Wexre Verdem, a female ...	155

No. 1 gives forty-eight instances of ultra-centenarian longevity which have been selected from various sources prior to the year 1800, including some well-known names, and, with the exception of nine, all occurred in the eighteenth century; whilst of the nine, one occurred in the sixteenth and eight in the seventeenth century. No. 2 gives twenty-four instances of ultra-centenarian longevity in persons who have died of late years, that is, from 1808 to 1823. Whilst No. 3 gives twelve examples of ultra-centenarians who were living in the several years set against their respective names between 1818 and 1823. In this last table, although the date or year of death is not given, the number must be included in the general analysis of the ages in the whole eighty-four cases. Of these we find

between 107 and 110 (but including the latter date), 10

„ 110 „ 120 „ „ „ 16

„ 120 „ 130 „ „ „ 14

„ 130 „ 140 „ „ „ 24

„ 140 „ 150 „ „ „ 10

„ 150 „ 160 „ „ „ 7

Then, after the last-named year, occurs one of each—168, 169, and 175.

Now, I do not profess to give all these instances as correct, but there are fair and reasonable grounds for believing that a certain proportion actually did reach the great age after their respective names, and every one was recorded or noticed in some way or the other in print.† According to the Thomsian

* His father was 117 years of age, his mother 109, and his wife 105. He was the father of fifteen children.

† He had several wives, and his youngest child was 28 years old at his death, making him 107 when she was born.

‡ Hugh Miller, in his “Scenes and Legends of the North of Scotland,” refers to Elspat Hood, a native of Cromarty, who died in the year 1701. It is said that she attained to the extraordinary age of 120 years (p. 28, 2nd edition, 1850).

doctrine of the present day, every one is open to doubt, but I feel satisfied that, in three-fourths at any rate, the age stated may be looked upon as correct; and my reason for saying so is, that a comparatively small percentage of recorded, or rather reputed, centenarianism is found to be incorrect. The balance of testimony is altogether in favour of centenarianism, and this cannot be gainsaid by anyone who chooses to investigate the subject for himself, as I have done. Indeed, as I started for the purpose of physiological investigation, wherein it was *absolutely necessary* there should be no possible source of error, I found that, of the nine cases that came under my notice, in one only was there any reason to doubt the correctness of the age, and that has been solely because the parish register in which the baptism occurred was unknown, although the spot or locality of the birth was clear enough. But if any argument were needed to prove that the age is, for the most part, correct in these tables, I am, fortunately, in a position to supply it.

A short letter appeared in the London *Times* of August 16th, 1873, from the Rev. Arthur Loxley, of Norcott Court, Northchurch, Berkhamstead, Hertfordshire, relative to a feat he had witnessed on the morning of the 14th (the date of his letter) of the reaping of two sheaves of wheat belonging to Mr. John Mead, of Tring, Herts, by Mrs. Elizabeth Leatherlund, aged 110 years, and that her baptismal certificate could be seen at Mr. Tompkins', Tring. Now, if this were correct, so far as the age was concerned—and I had no reason to doubt it myself—then it would readily occur to one that the ages given in Mr. Rance's tables were by no means improbable, more especially as I had seen persons who had reached 105 and 106. As I left for Scotland the morning that the letter appeared in the *Times*, I had no opportunity of investigating the matter until my return at the end of September, when I corresponded with the parties mentioned in the letter. The result was, I received a photograph of the old lady from Mr. Tompkins; and on the 15th October I went to Tring, called on Mr. Tompkins, and was taken by him to see her. Of what occurred during my visit, and a description of her appearance and condition, I shall speak presently; but what I will now do is to prove the correctness of her age, and that, fortunately for the interests of both physiological and anthropological science, can be done most satisfactorily.

Her maiden name is Herne, and her parents were gipsies, her father's family of Herne, or Horam, being very well known in the counties of Herts, Bucks, and Oxon, as belonging to the wandering tribes before their encampments were disturbed by law. She was born at Chinnor, near Tetsworth, Oxfordshire,

and baptised in the parish church there on April 24th, 1763, which is confirmed by this entry in the register of baptisms in the parish there for the year 1763, in charge of the Rev. Sir William Augustus Musgrave, Bart., Rector of Chinnor:—"Elizabeth, daughter of Thomas Horam, Travailer, Apr. 24." With regard to this entry, which was discovered through information furnished by herself relating to her birthplace and great age, and giving beforehand the Christian names of her father and herself, together with his occupation, which were all found to tally, it is necessary to state that she must have been a few days old when she was baptised, as is the custom with the gipsies the same as ourselves, and the name is spelt Horam, instead of Herne; but of that she herself can give no explanation. Her father's Christian name, she said, was Thomas, and the name may have been pronounced Horam, or entered as the word was caught by the parish clerk or the rector. The two names, therefore, may be taken as identical, and the gipsies consider them as synonymous. They usually give the name of their occupation as travellers or wanderers. All this, therefore, is confirmatory of the accuracy of the entry and identification of the person. Her mother's name does not appear in the register, but that was not an uncommon circumstance, at the date given, among the humbler classes; in a higher position of life both names generally appear. Her mother, she stated in reply to a question, died in childhood at Chinnor, and this may have been a reason for its omission. There is no register of her death there, and she told the Rev. Mr. Walford that her father would not tell her where she was buried; but as a gipsy, says the *Bucks Advertiser* and the Rev. Mr. Walford, she might be buried, gipsy fashion, under a hedge in a wood or common, under cover of the night, to save expense, far away from any recording agency.

In reply to a letter from the Rev. W. Walford, curate of Tring, the rector of Chinnor stated that a careful search in the register of Chinnor failed to find any similar entry with the name of Herne for thirty-seven years after—i.e. between 1763 and 1800—which, therefore, disposes of the only objection of any importance to her age that was brought forward in the *Times*—namely, that the register of an older person had been mistaken for hers.

She spent much of her early life encamped near Chinnor and other places in the three counties named, migrating with her tribe to other places in the south of England. She married Joseph Leatherlund, a private in the Bucks Militia, at St. James's Church, Dover, in 1785, and both remained in that town for several years. A search in the register of St. James's,

and also of the parish of St. Mary's, failed to discover any entry of the marriage, nor has she her marriage lines; but, as the *Bucks Advertiser* again says, this event may have been as much in the gipsy fashion as that of her mother's burial.* It must be observed, however, that the non-discovery of the record of the marriage does not affect the question of her age, as shall be presently shown.

According to her own account, she moved about to various military stations with her husband's regiment, visiting Exeter, Liverpool, and Northampton. She bore him five children, three sons and two daughters. Her first child, Samuel, was born some years after her marriage, when she was 29 years old. This she stated herself, in reply to a direct question by me, and we shall see its importance presently. The next were twins, William and Thomas; then Elizabeth; and, lastly, Saborah. The last is the only one alive, and has a perfect recollection of her brother and sister, and furnished Mr. Francis Craig, of Ripon Street, Aylesbury, with most of the information relating to them. They all lived on Buckland Common, William marrying Lydia Norwood, who also lived there, about 1848, and died without any family about 1862 or 1864. Thomas, his twin brother, never married, died at Charteridge, and was buried at Chesham twenty years ago, whilst working for Mr. Lasenby, a farmer of the former place. Elizabeth married a gipsy of the name of Herne, or Hearn, and did not live to a great age. Samuel, the eldest, with his wife and five children, were drowned many years ago in the hop country in Kent, and were buried at Hadlow, between Tunbridge and Maidstone. The date of this the old dame could not recollect when I saw her in October, 1873; I was told that there was a notice of the catastrophe in the papers at the time. Joseph Leatherlund, the old dame's husband, died at his native town of Carrick-on-Shannon, in Ireland, and was buried February 4th, 1814, when Elizabeth, his widow, returned from Ireland to her own kin, living with a relative until 1830. Saborah, the youngest daughter, who is alive, I shall speak of further on.

I learnt from Mr. Tompkins that the Rev. Ed. Owen, of the Rectory, Bradwell-on-Sea, Maldon, Essex, knew her as an old woman for forty-five years, and I believe his father did before him. But it appears, according to Mr. Francis Craig, in the *Bucks Advertiser*, that there were living lately some old men in Tring, themselves about 90 years of age, who always said they thought that "Betty," as they called her, was much older than they were; and there was one patriarch, who would have been 95

* She stated to Mr. Walford that she was living, when married, at Dover, in a certain alley, which he found was the haunt of the lowest people of the place.

this year, who bore similar testimony. Mr. Bird, the bookseller, and other inhabitants of Tring, state that forty or fifty years ago, as early as they can recollect, Betty—who was still “Old” Betty—was then quite an old woman. The people of Hertfordshire and Buckinghamshire have been generally familiar with her stooping figure, red cloak, and stick, for the last fifty years, particularly in harvest time, when this tough old gipsy was very handy with the sickle. Her last effort of this description, in the field, was witnessed by large numbers of persons, a photograph of her, with a sheaf of wheat on her knees, being taken by Mr. Piggott, of Leighton Buzzard. She used to make nets, and plod about the country selling them. For the last twelve years she lodged at Mr. Saw’s, Frogmore Street, Tring, where she was known to be a centenarian all that time, and she subsisted upon the little sums which were given her by visitors. An old man, buried in Tring churchyard, whose tombstone bears the age of 93, used to state that “Old Betty” was eight or ten years his senior, and he had known her since she was a girl.

This testimony is very good, as far as it goes, but I felt that the point of proof—the crucial point—depended upon finding the record of the drowning of her son, Samuel, and his family, at Hadlow, in Kent; and accordingly on 27th April, 1874, I wrote to my friend, Dr. Edward Miles Coverdale Hooker, of Hadlow, on the subject, asking him to make inquiries of the sexton of the burying-ground, or to refer to the register of burials. To my agreeable surprise, I received an answer on the 30th, telling me he had that morning taken a photograph of the tombstone (or really a monument) raised to the memory of the victims of the catastrophe referred to in my letter, which he kindly sent me the next day. From it I learnt the date of the catastrophe was 20th October, 1853, just twenty-one and a half years ago, and the monument gave a list of the names of all the family who were buried beneath it, as well as their respective ages, which, it appears, were accurately given by the only surviving child—a daughter—of Samuel Leatherlund himself, who was miraculously saved. Samuel Leatherlund, the father, was 59 years old, his wife, Charlotte, 56, whilst their daughter, Comfort, was 24, Selina, 22, and Alice, 18. Then there was John Herne, his nephew, aged 28, Luina, aged 26, his wife, whom Dr. Hooker wrote me was a daughter of Samuel Leatherlund, who had married a cousin, and their children, Centine, aged 4, and another child, aged 2.

When Samuel Leatherlund was born, his mother, the old dame, would have been 29 or nearly 30 years old. Had he been alive now his age would have been 81, or perhaps 82, *i.e.* twenty-nine

years younger than his mother. This fact of the age settles the question, beyond the possibility of any doubt, that old Mrs. Leatherlund is really of the very great age of 111 years, for if she was 29 years old when she says Samuel was born, then his age now would be, if he was alive, 82, because there is the calculation of some odd months not taken into account. With the humbler classes the rule is more invariable than with the wealthy, that almost every mother recollects what her age was when her first-born child came into the world.

What now was to be done was to refer to the newspapers of the time for an account of the catastrophe. And this was readily accomplished in that invaluable repository, the library of the British Museum. There I referred to the *Times*, the *Illustrated London News*, *Kentish Observer*, *Rochester Gazette*, and the *Maidstone and Kentish Journal*.

In the *Times* of Saturday, October 22nd, 1853 (p. 7), was an account of what was described as "A Fearful Accident on the River Medway." A party, consisting of men, women, and children, were drowned by the overturning of a waggon, containing nearly forty persons, into the river Medway, then swollen with recent rains, when crossing a wooden bridge, and that nearly all were missing. In the same paper of Monday, 24th October (p. 10), was a column and a quarter, giving an account of the accident, and the particulars of the coroner's inquest. Among the names of the drowned were Charlotte Leatherlund, aged 55, and her daughter Comfort, aged 24. Then among the survivors were Fanny Leatherlund, who said that Charlotte Leatherlund was her mother, and that her father and mother and sisters were all drowned. She had three sisters, a brother-in-law, and a little baby, who had not been found. A little girl, Herne, belonged to her sister. When the waggon containing the people, about forty, was descending the opposite side of the bridge, one of the horses tripped or stumbled, the hind wheel broke the rotten fence of the bridge, and the earth next to it giving way, the waggon with its contents was dashed into the water, and thirty-seven persons had perished. The river had overflowed from late heavy rains; the current, therefore, was very rapid, and the loss of life great.

In the *Times* of October 25th (p. 17), some further particulars were given, and the mention of other bodies recovered. There was an account of the burial of some of the bodies at Hadlow, giving the names, particularly, of Samuel, Charlotte, Comfort, and Selina Leatherlund, with others of a family who belonged to the gipsy tribe. All these people were in the employ of Mr. Cox, hop-grower, and had been engaged in hop-picking.

In the *Illustrated London News* of October 29th, 1853 (p. 367),

is an account of what is there called a "Frightful Accident on the Medway," which gives the same particulars as in the *Times*. It states that the lamentable result of the drowning of some thirty-two persons was chiefly due to the struggling of the mass of human beings with one another in the water. On the next page of the same paper is an engraving of the "Upper Great Hartlake Bridge over the Medway, Hadlow, the scene of the late Accident." It mentions that all were interred in Hadlow churchyard, and the list included the following persons, who were the children, grandchildren, and kinsfolk of the old dame recently alive:—Samuel and Charlotte Leatherlund and their children, Comfort, Selina, and Alice; also John Herne and his wife, Centine, and their two young children.

In the *Kentish Observer* of Thursday, October 27th, 1853, is an account of the accident, with the inquest, occupying a column and a half; it is described as occurring at Tudeley, near Tunbridge. In the *Rochester Gazette* of Tuesday, October 25th, 1853, is likewise a column and a half about the accident, and the mention of thirty-seven persons drowned. Whilst in the *Maidstone and Kentish Journal* of the same date, in which three columns are devoted to the subject, the number is stated to be thirty-five. This last paper gave the names and ages of all those lost, as near as could be ascertained, including Samuel and Charlotte Leatherlund, and their three grown-up daughters, Comfort, Selina, and Alice, and Looney (for Lavinia) Hearn, and Centena her child.

I have been particular in giving the references to the names of the family, to clearly establish their identification and relationship with the old dame recently alive, and upon that point there can be no dispute. In my conversation with her in October, 1873, she told me that her son *Hiram* and his family were drowned, but she meant Samuel, and it appears she had a descendant of that name. Mr. Tompkins ascertained from her that her two sons, Thomas and Samuel, were born and baptised at Dover, where her husband then was as a soldier. Two other children, daughters, were baptised at Welford, in Northamptonshire. Her youngest and only surviving child, a daughter named Saborah, as I said before, is alive, and her baptism occurred at Bovingdon Church, Hemel Hempstead, Herts, as the Rev. W. Walford kindly informed me. In the register she is called Sibirah, daughter of Joseph and Elizabeth Leatherlund, soldier. She was baptised May 21st, 1815, and born, the register says, March 28th, 1815. As Joseph Leatherlund was buried Feb. 4th, 1814, she was born 13½ months after that date. She is married to a Mr. Wright, a well-to-do agricultural labourer, residing eight miles from Tring, employed

by Mr. Thomas Gee, of Bellingdon, and is the mother of nine children, all now living, the eldest 37 years old, a son, and the youngest 16; six of them are married, who have twenty children among them. These last are the great grandchildren of the old dame. When Saborah was born, her mother, the old dame, had turned 51, and was, indeed, close upon 52, an age that is sometimes, though not commonly, fruitful; yet of my own knowledge, in the early part of my medical life, I have seen that age exceeded several times in persons who bore children. And if this fact were overlooked here, it would be laid hold of by the Thomsians as an argument against the correctness of the age of the old dame her mother. But to show that women do bear children much over 50, the following is given from the *Cork Advertiser*:—"Oct. 2nd, 1830, at Laugh-tamoneen, county Clare, aged 63 years, the wife of Mr. James Lysaght, of a daughter. Her husband is in his 73rd year. This happy couple had had no increase to their family for the last twenty years."

Having now considered all the facts bearing upon the extreme age of Mrs. Leatherlund, which, it seems to me, would be considered proved in any court of law, I shall now proceed to speak of my interview with the old dame herself, and will finally give the views I arrived at concerning her physical condition, being the result of my careful examination of her.

It was on the 15th October, 1873, that I went to Tring, and was taken to see her by Mr. Tompkins, of that place, who, I am bound to acknowledge here, has not only taken a deep interest in her welfare himself, but has spared neither trouble nor inconvenience to introduce the old dame to visitors possessing an interest in persons of such an advanced age. The day was fine and beautiful, though showery, and on getting to Tring early in the afternoon and calling on Mr. Tompkins, he took me to a lodging-house known as the Red Lion Inn, back of the church, where the old dame was living. In a few minutes she toddled into the room, with the aid of a stick, being partly supported at the same time. She was of short stature, a little bent with age; her complexion was brownish, for she was of gipsy descent; her countenance was a series of thick folds, not wrinkles, and she was most unmistakably many years older in appearance than any of the nine other centenarians I had examined thus far. She shook hands with me, conversing and chatting away continually in a good, clear, and distinct voice, not tremulous nor cracked, saying she was glad to see me and Mr. Tompkins. Her sight was not now very good, although she could distinguish things tolerably well, and even knitted twine bags, two of which she gave me; yet it was becoming

impaired. One eye, I was told, had little or no sight. She could not see to read, but she could distinguish persons and things. She was remarkably intelligent and communicative, though her memory was now becoming a little impaired. Unless she was asked questions she was continually talking, indeed, I might say was garrulous, like many old people. The subject of our conversation was at first bearing upon her age and family history, in which most of the facts already related were gone over, and especially her age when her first child was born. Then it related to her health and physical condition, and her replies to my questions, when clearly put and made easy to her mind, were such as I had every reason to be satisfied with. She heard pretty well, on the whole, but was a *little* deaf; yet the faculty of hearing was tolerably perfect, as she heard almost every question put to her. The sense of smell was perfect; she took snuff in moderate quantity, which she greatly enjoyed. So was the sense of taste. She had never smoked, and had always been regular and temperate in her habits. The skin was generally dark, her hands particularly so, yet it was as soft as velvet—indeed, I never felt a softer, and it was thin on the backs of the hands. Mr. Lipscombe, who attended her when necessary, told me it was in great folds about the body, as on the face. Her hair was quite grey; she was not bald. The forehead was not a broad one—indeed, the head was narrow, and looked as if laterally compressed. The muscles of the neck stood out in prominent relief, particularly the sterno-cleido-mastoid, with great hollows in front and behind it, especially at its lower part, from the entire absence of any adipose or fatty tissues. As concerned her physical condition, she breathed wholly by the chest, and not the abdomen—that is to say, the chest expanded during inspiration readily, owing to the resiliency of the costal cartilages, which were not ossified, as is usually the case in persons approaching 70. The breathing was slow, regular, and uniform, not at all hurried, even during our conversation. The lungs themselves were in a perfectly normal condition, the breathing being clear and distinct all over the chest. The heart's action was regular and natural, with a feeble impulse, but not an abnormal sound was heard. The pulse at both wrists was free from any induration, and was quite soft, as in a girl; it beat regular and uniform, about 68 per minute. No calcification nor hardness of any kind was to be felt in the arteries of the arm, the neck, or the temples. The heart and the lungs, therefore, were perfectly free from any of the changes of advanced life, so far as could be made out by careful examination. After some little difficulty, when her intelligence was appealed to—for at first she

became frightened, lest she should be choked—she permitted me to introduce the laryngeal mirror into the back of the fauces, and there a splendid view was obtained of a vertical or erect epiglottis, of a leaf-like form, and a perfect larynx, with short vocal cords, normal in colour, with a triangular glottis. Indeed, all these organs were those of a young person. Externally the thyroid cartilage, small in size, felt quite soft and flexible, and could be compressed laterally, and gave a cartilaginous, gliding sensation over the cricoid; and the trachea could be flattened either laterally or anteriorly, all showing the absence of senile changes.

With the perfection of the respiration and the circulation we should naturally expect a good digestion, and so there was, for the organs concerned in it were healthy. She had, however, only three teeth in front, in the lower jaw, with two or three molars, and several in the upper jaw, especially of molars; not one was decayed in the least. The tongue was large and healthy, and the faucial mucous membrane of a pale pink. On the whole, her appetite was fairly good, although now and then a little indigestion occurred after her tea, which, no doubt, was the cause of some itching of the skin at night on going to bed; at least, that was when I saw her, but probably there was nothing of the kind afterwards.

After a long conversation and the conclusion of my examination, I bid her farewell, receiving a bunch of the wheat she had helped to reap, besides the two bags of twine, which I venture to produce at this meeting. I thought at first she was supported whilst reaping, but it appears not; she managed to do it without assistance.

The result of my examination of her, which was longer and more elaborately conducted than in most of my other examples, went to prove the same facts, that there was an absence of those changes of old age so commonly met with in persons of from 70 to 80. She was more like a girl, constitutionally, than an aged person; yet there was the indication of feebleness necessarily to be expected, which, *cæteris paribus*, did not prevent her reaching to her present exceptionally great age.

Such, then, were the physical conditions presented by the old dame, and a consideration of such an extreme instance of longevity teaches us two practical facts: one is, the absence of senile changes, as commonly understood by the physiologist, and which, I maintain, is the chief reason of centenarians attaining to such a great age; and the other is, that if a person like the old dame reaches to the age of five and a half score years, others may do the same, and therefore it will not do to ignore what must be apparent to common sense—namely, the

occurrence, now and then, of instances where even the great age of six score is reached.

As a practical and conscientious physiologist and physician, I have only one object to serve, independently of any theory to uphold, and that is the propagation of truth and, of course, the correction of previous errors. But at the present day it would be preposterous to ignore cases or instances of exceptional longevity of former years because we cannot discover the proofs of their age in our time. There can be no doubt in times past there were men as conscientious and painstaking as exist now, and to ignore their facts and upset their reasoning, without just cause, is unjustifiable, unscientific, and unphilosophical. In saying this, I allude to the doubts cast upon many cases of ultra-centenarianism of a remarkable nature, that are historically known to almost everybody. A great deal was made of such examples in the times of their occurrence, and they were under personal observation for a long period of time, and it may be considered certain that there existed a strong desire then, as now, to arrive at the truth, and not to have any imposture palmed off upon the people. I trust, however, that the example of extreme longevity now brought before the Institute will do some good, for its authenticity has not only been proved by evidence of a recorded character, but it has been confirmed by an examination in which comparison with other centenarians has declared it to be older than any that has personally come under my notice.

In conclusion, it may be said that no one can converse upon the subject of centenarian longevity, write upon it, or discuss it in any way, without having the English Thomsian doctrine thrust before one, even by persons who acknowledge its fallibility. Such an instance as Mrs. Leatherlund wholly explodes it, and it will scarcely live as long as did its American Thomsian brother, that must be known to the medical practitioner of at least 25 years' standing. The logic of the Thomsians at first was that no person ever reached the age of 100 years, and when their premises were found to be untenable, from the number of genuine instances brought forward, the not less ridiculous ground was taken up that at any rate none overstepped the century. My argument is, if clearly authenticated instances occur of the age of 105, 107, and 109 years, there can be no reason against the assumption that persons whose organism is free from the changes of old age, as in centenarians, can and do live much farther still, and it explains the occurrence now and then of the truly exceptional ages reached of 120, 130, 140, and even higher.

Since this paper was written, the old dame, after a very slight

illness, so slight that it merely confined her indoors for two or three days, passed away from this life. On the 19th of January, 1875, a letter from my friend Mr. R. N. Lipscomb, surgeon, of Tring, who had occasionally seen her during life, informed me of her death the preceding night. He stated that in the certificate of death he had filled in her age as 112. Next morning I proceeded to Tring by an early train, to meet him, for the purpose of examining her. Unfortunately he was called away to a distance, but he left instructions with his assistant to aid me in his absence, and we proceeded together to Mr. Saw's, the Red Lion Inn, Frogmore Street, where I made the autopsy myself, the assistant recording the appearances as they were described to him. The particulars of this are given here, as they add greatly to the value and interest of such a well authenticated example of ultra-centenarian longevity as was the old dame's, which is sure to be consulted hereafter by everyone interested in the subject.

Autopsy at 12.30, about thirty-six hours after death.—Height during life was four feet nine or ten inches; the body, therefore, was small, and proportionate to her height. The rigor mortis was slight, and no odour was exhaled from the body. The integuments generally were of a yellow colour, with a shade of brown, but not darker than they appeared during life. They were a little loose over certain parts of the body, but the attenuation of the muscles, especially about the neck, did not seem to be so great as when she was seen by me in October, 1873. The muscular development generally was fairly good, and no decided emaciation to speak of existed. The mammae were firm and well developed, though small, with no dark areolæ around the nipples. Over the abdomen were the usual marks seen in persons who have borne children. In sewing up the body afterwards, the skin was so tough that the needle would scarcely penetrate it. On reflecting the integuments over the chest and abdomen, a little adipose tissue was found over the pectoral muscles, and over the abdominal muscles it varied in thickness from an eighth to nearly a quarter of an inch. The cartilages of the ribs at their junction with the bone were cut through with the greatest ease and facility, the knife meeting with no resistance from any osseous changes. The cut surface presented a narrow rim of true white cartilage, whilst the other part possessed a brownish tinge, the result of some change allied to fatty degeneracy, for a slight roughness was manifest to the finger, although the middle structure was quite soft; but before division of the costal cartilages the thorax could be compressed with ease, through their elasticity, as I had seen during life.

The lungs were healthy, crepitant throughout, and had the

usual appearance. Some slight congestion of the posterior part of the left was present, which, to some extent, may have been hypostatic; yet, associated with what was described as a trifling cold, it was the immediate cause of death. At the apex of each lung was a trifling adhesion, readily broken down, the connecting membrane having the appearance of ordinary areolar tissue. Both lungs at the margins of their lower lobes had an emphysematous fringe. The heart was perhaps a little large in proportion to the size of the body; it weighed, with the arch of the aorta, thirteen ounces exactly. In structure it was soft, a little flabby, and had a slight covering of fat. The coronary arteries were distinctly observed, but had not undergone any change. The right side of the organ was filled with dark clots of blood, whilst the left was empty. The muscular structure, cavities, and valves appeared to be normal. The arch of the aorta generally was enlarged, dilated, and somewhat attenuated; at its commencement the circumference was four inches and one-sixteenth, whilst at its termination it was three inches and one-fourth. An atheromatous patch, the size of a silver three-pence, was present on the lower surface of the transverse portion of the arch, whilst at the commencement of the anterior and left part of the ascending portion a ridge of atheroma existed, which did not involve the semilunar valves.

On opening the abdomen scarcely any trace of the omentum was observed. The stomach and alimentary canal were perfectly healthy, and not distended with flatus. The liver was of fair average size for the body, of firm, healthy structure, possessing a light claret-brown colour, and free from any white spot or patches. The gall-bladder was large in proportion to the liver, and filled, but not gorged, with bile; it contained no biliary calculus. The spleen was of the usual purple colour, comparatively small, slightly curved in shape, but healthy and firm. Both kidneys appeared to be healthy, the cortical and medullary portions fairly distinct, but in general structure soft and flabby. The ureters were normal, and so was the bladder, which was nearly full of urine. The uterus was very small, the Fallopian tubes and ovaries equally so, all quite healthy. The thoracic and abdominal aorta and other blood-vessels were soft, and free from any abnormal changes. The tongue, larynx, and trachea were removed for examination. Some of the papillæ on the dorsum of the tongue were much enlarged. The larynx was small and compact; the epiglottis, which had a slight notch on its superior margin, possessed the natural colour, shape, and appearance of early life. The vocal cords, short in length, had the merest tinge of yellow, but were otherwise normal. The aryteno-epiglottidean folds, the ventricles,

and all other parts of the larynx were as perfect in their formation as in a young person. All the cartilages of the larynx were flexible, with an absence of any calcareous changes, unless in the central solid parts of the wings of the thyroid. The rings of the trachea were white and glistening, perfectly flexible and soft, and could be compressed in any direction. The os hyoides was thin, the great cornua slender, one of them fractured on removal, and the right lesser cornu elongated.

I must not forget to mention that the cornea of both eyes was free from any *arcus senilis* or annulus, although her sight had not been very good of late years. Yet she had been able to knit twine bags almost to the very last.

It remains to say that any merely hearsay evidence brought forward against the old dame's age, such as has been furnished by the Rev. H. A. Harvey, late Vicar of Tring, or by Shadrach Hearn, her nephew, quoted in a letter by Mr. Parfitt, simply counts for nothing, when unsupported by documentary evidence. Even supposing her nephew to be correct, that her elder brother died at Nottingham in 1867 aged 100 years, and that she was two years younger than he, she would now be 104. That she was older than this brother by seven or eight years has been proved in a manner that cannot be questioned, in consequence of the most remarkable confirmation of the age given at which she was confined of Samuel, her firstborn, a circumstance which none but a medical mind could conceive, and upon which a medical jury would unanimously give their verdict as final and conclusive.

DISCUSSION.

Mr. BRABROOK, while complimenting Sir Duncan Gibb on the interesting physiological details he had given, and on the industry of his researches, was bound to say that, in his opinion, the evidence as to Betsy Leatherlund's having attained the age of 112 years was insufficient. She was, no doubt, a very old woman; certainly 98 years old, perhaps 100, but not much more. As to her identity with the person whose birth certificate Sir Duncan had quoted, there was no evidence. As to her marriage, there was no certificate of it; and with regard to its alleged date, had it been ascertained whether at that date the husband was really serving in the militia? [Sir Duncan Gibb: Yes.] Mr. Brabrook had been otherwise informed. Then the alleged interval between the marriage and the birth of the first child was a doubtful circumstance. Another circumstance of grave doubt was the birth of an illegitimate child when the mother would have been, if her alleged age be true, 55 years old. There must have been a dearth of young women of loose character in Tring if a gipsy widow of 55 attracted the attentions of the seducer. If, on the other hand, she was (as the speaker thought) at that time a buxom gipsy widow of 40, it was

not so improbable. In cases of alleged ultra-centenarianism, there was a tendency to exaggeration, which rendered it necessary that the statements of the most respectable and trustworthy old people should be corroborated. In this case, unhappily, the character of the poor old woman, her race, and habits of life, had been such as to deprive her unsupported statements of any weight whatever. With regard to the general question of centenarianism, Mr. Brabrook remarked that he thought the views of his friend Mr. Thoms were much misunderstood. Mr. Thoms's researches had established several cases of undoubted centenarianism. All he said was, that when you hear 105, 110, or 112 years of age talked about, you may be sure there is some mistake. Indeed, the speaker had within the last few days supplied Mr. Thoms with particulars from the National Debt Office of three cases of undoubted centenarian annuitants, one of them a gentleman who had recently called to receive his own annuity, and appeared in excellent health.

Mr. F. GALTON thought it erroneous to conclude that because the chances were so and so to one against a woman living to 112, and so and so to one against a woman bearing a child at the age of 52, that the chance of the double event was compounded of these two chances. It would be so if the two events were independent variables, but in this case they probably were not so. It was more likely that a woman, constitutionally fitted to live to an extraordinary age, would have the period of her youthfulness prolonged beyond that of ordinary women. As another matter of statistical theory, he would mention that he regarded the ages in the table submitted by the author, of an indiscriminate list of persons who had lived beyond 100 years, with extreme distrust, because the way in which its figures were distributed contradicted all experience of death-rates, and similar matters. It was well known that many fewer persons died between the ages of 80 and 90 than between those of 70 and 80; still fewer between 90 and 100 than between 80 and 90; and we have every right to assume that a similar law would continue to prevail during each successive decade. The figures in the table ought to give a distinct indication of this law, whereas they do no such thing. The table even asserts that there have been twenty-four cases of death between 130 and 140, as against sixteen between 120 and 130, and the same number between 110 and 120. The capricious distribution of these figures, and the number of times in which 130 occurred, afforded, in his opinion, a conclusive testimony of their worthlessness. He would conclude by asking the author whether he could throw any light on the ultimate cause of gradual decay and death—that is to say, what it was that produced these senile changes, which were sufficient by themselves, without the aid of any specific morbid condition, to limit the period of life. He had been much struck by a remark in some recent lectures by the great French physiologist, Claude Bernard, that the final cause of these changes and deteriorations lay in the incapacity of the several cells, of which all tissue is composed, to generate fresh cells as their successors, for an

indefinite time, by their process of subdivision. It was pretty well established that no organism can perpetuate itself except by means of sexual generation, and that all continued propagation by grafts, buds, or other asexual methods, tends to produce decay and extinction; and M. Claude Bernard considers senile deterioration to be due to this law. He would be glad to hear the author's opinion on the subject generally.

Mr. SCRATCHLEY wished to ask Sir Duncan Gibb if, in his reply, he would kindly state more fully his reasons for considering the statement made by Mrs. Leatherlund's nephew unworthy of credit? He understood Sir Duncan Gibb to say that the nephew had written to the *Times* to the effect that Mrs. Leatherlund's brother had died, a year or so before, at the age of 102, or thereabouts; and that, as he was her *elder* brother, Mrs. Leatherlund could not, in 1873, have been 110. Mr. Scratchley did not quite understand why Sir Duncan Gibb had dismissed this statement as unimportant.

Mr. HOWORTH, Major OWEN, and the PRESIDENT also joined in the discussion.

Sir DUNCAN GIBB, in reply, thanked the members present, not only for their patience in listening to his paper, but also for the encomiums of some of the speakers. He had heard the name of Pratt, aged 105 years, but had never seen him; and Baron Desair, of the same age, was not unknown; he is some four years younger than Count Waldech, the painter, who is still alive. Relative to the age of 51, at which Mrs. Leatherlund had her last child, there is nothing extraordinary about that; and the other instance, referred to by Mr. Howorth, did not occur in the same family, but was an instance brought forward by the author, taken from a Cork newspaper, showing that after an interval of twenty years a woman, aged 68, bears a child to her husband, much older than herself. The question propounded by Major Owen is a very pertinent one, and he (the author) thinks it helps to explain why Mrs. Leatherlund procreated in her 51st year; for undoubtedly where all the functions of life were so perfect as to permit her to reach the great age she did, physiologically speaking, therefore, at 51 she would be physically the equivalent of a female of 25 or 30. And although he had not read the details of the autopsy of the old dame, the womb was small, and its appendages were perfectly normal, a circumstance that is not always the case in old people. Then, again, although she was married some years before she had any family, it did not necessarily follow she was an immoral person, notwithstanding her last child was born some thirteen months after the death of her husband. Upon this last point, for the sake of the living, he should keep silent. In reply to Mr. Brabrook, and also the President, he would say that the fact of the marriage not being found recorded does not in the least affect the accuracy of the great age, because when the old dame had the question put to her point blank, such as you would expect a medical mind to conceive, "What was your age when your first child was born?" she unhesitatingly replied, "29, or between 29 and 30." Then, again, she said she

was some years married before her eldest child was born. This proved to be Samuel, who lost his life, in the manner described, with so many other persons; and, singularly enough, one of Samuel's children, a married daughter, happened to be saved, who, it is reasonable to assume, furnished the different ages on the monument. Upon that Samuel's age was 59; if living now he would have been 82, which gives 29 as his mother's age when he was born. This testimony is so clear, so overwhelmingly convincing, that not a single objection brought forward by Mr. Brabrook, or by his friend Mr. Thoms, can have the slightest weight against it. Then all the alleged circumstances of her life are abundantly proved. The history of the Bucks Militia, in which the old dame's husband was a private, is readily explained by the movements of the regiment to the various towns named, and in the muster-rolls his name would as certainly be found as that the regiment existed. Necessarily some difficulties must be expected in such an instance as the present, from the woman being a gipsy, although there is no proof that her husband was; he died in his native town in Ireland, and his burial is correctly registered. After that event she returns to the vicinity of the spot where she passed her youth. Mr. Francis Craig mentioned, in a letter to the *Times*, that the absence of senile changes, as found by the author, was an argument in favour of her age; but he (Sir Duncan Gibb) must distinctly state that he never brought that forward himself, and it is of no value at all in this question. Taken with other circumstances, it shows she was the same as all other centenarians physically. Then, again, the entry of her baptism cannot be that of an older person, as supposed by Mr. Brabrook, for she furnished the information herself which led to its discovery, a fact that would be conclusive of her age in a court of law, because no other person could have given the clue to this but her. The names of Horam and Herne are synonymous among the gipsies, which readily accounts for the former in the register. And no entry with either name occurs for some thirty-seven years afterwards in the same register. He (the author) admitted it was not pleasant for either Mr. Thoms or his disciples to have a case confirmed like that under consideration, because it wholly negatives their premises. And he took exception to some of Mr. Thoms's *post-mortem* refutations in his book, because they were not made during the lifetime of the parties, when there was a chance of personal explanation. In the consideration of his paper, it required a medical mind to discuss some of the questions, for, as it should be readily understood, the old dame procreating at 51 cannot in the least affect the question of her age, as he had already stated. He would not go into the question of life, nor reply to that of "Why we die?" asked by Mr. Francis Galton, because it is beside the matter. No doubt as age advances, if there is no actual disease, the great functions of life gradually come to an end, and death occurs. In extreme old age, although all the functions are natural, and regularly performed, as in the old dame, there is necessarily feebleness, which permits a puff of wind to extinguish life; for

the merest cold was sufficient to do so in her. He had nothing further to say in reply, beyond reiterating the fact that all he had brought forward satisfactorily confirmed the age of the old dame, which would be acknowledged by the impartial reader of his paper in future years.

The meeting then separated.

MARCH 23RD, 1875.

Colonel A. LANE FOX, *President, in the Chair.*

The minutes of the last ordinary meeting were read and confirmed.

The election of Colonel W. J. FORLONG was announced.

The following list of presents was read, and the thanks of the meeting were voted to the respective donors.

FOR THE LIBRARY.

From the SOCIETY.—Proceedings of the Royal Society. Vol. XXIII. No. 159.

From the SOCIETY.—Proceedings of the Royal Geographical Society. Vol. XIX. No. 11.

From JAMES BURNS, Esq.—Human Nature, March, 1875.

From the ASSOCIATION.—Annual Report of the Geologists' Association, 1874.

From the EDITOR.—Nature (to date).

From the EDITOR.—Revue Scientifique. Nos. 37 and 38. 1875.

FOR THE MUSEUM.

From HENRY P. LE MESURIER, Esq.—Three Boomerangs from Kattyawar, Bombay.

A letter from Mr. H. P. Le Mesurier was read, in which he presented boomerangs, &c., to the museum, and lent for exhibition an unbaked cooking-pot from the Andamans.

Major OWEN drew the attention of members to the alleged discovery of works of man in Switzerland of high antiquity.

The PRESIDENT (the Rev. DUNBAR I. HEATH, *Treasurer*, in the chair) read the following communication:—

NOTE *on the CHEST MEASUREMENT of RECRUITS.* By Colonel A. LANE FOX. [With woodcuts.]

ATTENTION having lately been drawn in Parliament to the method employed in the army of taking the chest measurement of recruits, it occurred to me that some statistics on the subject, obtained by me in my capacity as the commander of a brigade dépôt, might be of interest to the Institute.

My attention was first drawn to the difference of chest



measurement caused by passing the tape across or beneath the bladebones, by the fact of a man enlisted by me, and passed with a chest measurement of 33 inches, having been subsequently rejected as having only 29 inches measurement, and within a month re-enlisted in another place, and again passed as measuring 33 inches. This was, of course, an extreme case, but in order to avoid such an occurrence in future, I determined to have two measurements taken—one horizontally, according to the army regulations, and the other obliquely, under the bladebones. The results are given in the annexed table (pp. 104, 105).

It is probable that cases of the same kind must have occurred elsewhere, for on the 8th of the present month the subject of chest measurement was brought to the notice of the House of Commons by Colonel Mure, whose remarks I here copy from the *Times* of the 9th inst.:—"There were two fallacies," he said, "about chest measurement and the testing of vision. It was usual to measure the chest below the scapulae, or shoulder-blades, but in the army it was now the practice to ask the recruits to hold up their arms, to put the tape over the arm-pit, and then to lower the arms and measure the chest with the tape passing over the shoulder-blades. In this way advantage was sometimes given to a weedy man, who came out with a magnificent chest measurement; whereas, if he were measured properly, he would have none at all. Formerly the sight of recruits used to be tested at a distance of fifteen paces, but two or three years ago the distance was reduced to ten paces." Here I may observe that Colonel Mure has made a slight error. The recruit is not measured immediately under the arm-pit, and the object of making the recruit hold his arms up is not to increase the measurement, but merely to get them out of the way whilst the tape is being properly adjusted on the line of the nipples.

The order, as laid down in paragraph 11, section 19, of the Queen's Regulations, is as follows:—"The recruit is also to be measured by placing the measuring tape quite horizontally round the chest, the lower edge of the tape touching the upper part of the nipple, with the arms hanging loosely; the tape should not be drawn so tight as to compress the surface. The recruit should then be made to count slowly from one to ten, to prevent any undue inflation of the chest. The length in inches shown on the application of the tape is the correct chest measurement." The effect of counting ten slowly is usually to reduce the measurement from $\frac{1}{2}$ to 1 inch.

Mr. Hardy, in his reply to Colonel Mure, said that he should consider it his duty to institute a careful inquiry, particularly as to what had been said about chest measurement and the

testing of vision. "It would be a serious thing indeed," he said, "if they were of the superficial character represented."

This being the state of the case, and as the measurements taken by me are extra-official, I am at liberty to communicate them. I thought that the members of the Institute might like to know, from the statistics thus obtained, how the matter really stands in regard to these two measurements.

With the exception of a short period, during which, owing to a misunderstanding, the second measurement was omitted, I have had every man who was enlisted at Guildford measured in both directions, and the results are given in the accompanying nominal list of the recruits measured. One hundred and thirty-six men are included in the return. Of these there are ten instances in which the oblique measurement exceeded the horizontal, twenty in which the two measurements were the same, and in the remaining one hundred and six cases the horizontal measurement exceeded the oblique measurement.

But we obtain this additional result from the return. In May, 1874, the standard for infantry was raised from 5 feet 4½ inches to 5 feet 5 inches, or, rather, the permission to enlist men at the lower stature was cancelled. Having observed that the difference between the two measurements, that is, the excess of the horizontal over the oblique measurement, was less since the standard was raised, I caused the return to be made out in the order of heights, placing the shortest men at the top of the list, and having divided the whole into two nearly equal divisions, I found that in the division in which the height was under 5 feet 6 inches the average horizontal measurement is .7 of an inch more than the oblique, whereas in the division in which the height exceeded 5 feet 6 inches, the average excess of the horizontal measurement is only .53. (See figs. 1 and 2, p. 106.) And further, taking the first fifteen men on the list whose height is under 5 feet 5 inches, I found that the excess of the horizontal over the oblique measurement amounted to exactly 1 inch.

From this we see clearly that the excess of the horizontal over the oblique measurement bears a certain ratio to the height, that is to say, it diminishes as the height increases. The reason for this is easily explained. I do not give any return of the ages of these men, because no return of age would be reliable. The men who wish to enlist sometimes give their age at 18 when they are under that age, and it is often difficult to judge of the age of a youth in that class of life.

In young, undeveloped lads the shoulder-blades protrude more than when they are of mature age; the muscles under the arm have not yet filled out, which is shown by the fact that after a few months' service, with better feeding, the chest

measurement increases considerably, and the taller men, as a rule, are better made. The result tells in favour of maintaining the standard at its present height. If the same results were confirmed by more extended statistics of the same kind, they would serve to show, in all probability, that any reduction of height below 5 feet 5 inches would be accompanied by a great falling off in the stamina of recruits.

Then as regards the question whether the horizontal or oblique measurement of the chest secures the best results, I leave it to physiologists to determine which of the two measurements affords the best test of strength and stamina. It is only where the height of the individual is below 5 feet 5 inches that any very marked difference is seen, and as this is now below the standard for the infantry, it does not apply. But it must be borne in view that the horizontal measurement is the most easily regulated throughout the service. If the oblique measurement were to be sanctioned, it would be open to the recruiting sergeant to give a greater or less degree of slope to the tape, according as it might be his interest to pass or reject the man; and as, for the reasons already given, this is a question which also affects the pay, and consequent efficiency, of the recruiting sergeant, it appears desirable to adhere to that mode of measurement by which uniformity can be most readily secured. The same remark, I need hardly say, applies with nearly equal force to measurements taken with a view to anthropological statistics.

RETURN SHOWING THE CHEST MEASUREMENT OF 136 RECRUITS WHEN TAKEN HORIZONTALLY, ACCORDING TO THE QUEEN'S REGULATIONS, AND WHEN TAKEN OBLIQUELY, SO THAT THE TAPE PASSES BENEATH THE SHOULDER-BLADES.

Re- cruits.*	Height.		Chest Measurement.		Re- cruits.*	Height.		Chest Measurement.	
	Feet.	Inches.	Horizon- tally.	Obliquely.		Feet.	Inches.	Horizon- tally.	Obliquely.
			Inches.	Inches.				Inches.	Inches.
1	5	4½	34	32½	16	5	5	34½	34½
2	5	4½	33½	31½	17	5	5	33½	31½
3	5	4½	34½	33½	18	5	5	34	33½
4	5	4½	34	33½	19	5	5	34½	35
5	5	4½	36	35½	20	5	5	34	33½
6	5	4½	33½	33½	21	5	5	33	33
7	5	4½	36	34½	22	5	5	34½	34
8	5	4½	35½	33½	23	5	5	34½	34½
9	5	4½	33½	32½	24	5	5	35½	35
10	5	4½	33½	33	25	5	5	36½	36
11	5	4½	34½	35	26	5	5	35½	35
12	5	4½	35½	35½	27	5	5	34	34½
13	5	4½	34	33½	28	5	5	33½	34
14	5	4½	33½	32½	29	5	5½	34	33
15	5	4½	33½	31½	30	5	5½	35	34

* Numbers are inserted in this column instead of the names of the recruits, which appeared in the original return.

Chest Measurement of Recruits.

105

Re- cruits.	Height.		Chest Measurement.		Re- cruits.	Height.		Chest Measurement.	
	Feet.	Inches.	Horizon- tally.	Obliquely.		Feet.	Inches.	Horizon- tally.	Obliquely.
31	5	5½	33	33	84	5	6½	35½	36
32	5	5½	34½	33	85	5	6½	35½	34½
33	5	5½	35½	35	86	5	6½	33½	33
34	5	5½	36	35½	87	5	6½	33½	32½
35	5	5½	33	32½	88	5	6½	35½	34½
36	5	5½	35½	35½	89	5	6½	35½	34½
37	5	5½	33½	32½	90	5	6½	33	32½
38	5	5½	33½	32½	91	5	6½	34½	34
39	5	5½	37½	36½	92	5	6½	37½	37½
40	5	5½	36½	35½	93	5	6½	33½	33
41	5	5½	34½	33	94	5	6½	35	34½
42	5	5½	35½	34½	95	5	7	35	33½
43	5	5½	33	32	96	5	7	37½	36½
44	5	5½	33	32½	97	5	7	36½	36½
45	5	5½	34½	34½	98	5	7	36½	35½
46	5	5½	34	33½	99	5	7	35½	35½
47	5	5½	33½	33	100	5	7	33	32½
48	5	5½	33	32½	101	5	7	35½	35½
49	5	5½	34	33½	102	5	7	34	33½
50	5	5½	33½	33½	103	5	7	36½	36½
51	5	5½	34½	32½	104	5	7	33	32½
52	5	5½	33½	31½	105	5	7	39	38½
53	5	5½	34	33	106	5	7	36	36½
54	5	5½	35½	34½	107	5	7	34½	33
55	5	5½	33½	32	108	5	7	38½	36½
56	5	5½	37½	37½	109	5	7½	34	33½
57	5	5½	33½	33½	110	5	7½	34½	32½
58	5	5½	36½	36½	111	5	7½	36½	36½
59	5	5½	34½	34½	112	5	7½	38½	38½
60	5	5½	36½	35½	113	5	7½	36½	36
61	5	6	34½	34½	114	5	7½	34½	34½
62	5	6	35½	35	115	5	7½	35	35
63	5	6	35½	34½	116	5	7½	34½	34½
64	5	6	34½	34	117	5	7½	34½	33½
65	5	6	33½	33	118	5	7½	34½	33½
66	5	6	35½	35½	119	5	7½	35½	35½
67	5	6	33	32½	120	5	7½	36½	36½
68	5	6	33½	33	121	5	7½	34	33½
69	5	6	34	33½	122	5	8	34½	33½
70	5	6	34½	34	123	5	8	38½	38½
71	5	6	33½	33	124	5	8	34	33½
72	5	6½	37½	38	125	5	8	36½	36½
73	5	6½	34½	33	126	5	8½	35½	35
74	5	6½	37½	38	127	5	8½	36	35½
75	5	6½	35½	34½	128	5	8½	39	38½
76	5	6½	35	33½	129	5	8½	34½	34
77	5	6½	35½	35½	130	5	8½	35½	35
78	5	6½	36½	36½	131	5	8½	34	33½
79	5	6½	34½	34	132	5	9½	34½	33½
80	5	6½	34½	34½	133	5	9½	34	33½
81	5	6½	34½	32½	134	5	9½	34½	34
82	5	6½	35½	34	135	5	10	35½	34½
83	5	6½	35	34½	136	5	10½	41½	42

Average, 34.92 horizontally; 34.33 obliquely; difference, .59.

The chest measurement of the 60 men under 5-ft. 6-in. averages horizontally, 34.45; obliquely, 33.75; difference, .7. (Fig. 1.)

The chest measurement of the 76 men over 5-ft. 6-in. averages horizontally, 35.3; obliquely, 34.77; difference, .53. (Fig. 2.)

The chest measurement of the 15 men under 5-ft. 5-in. averages horizontally 34.33; obliquely, 33.33; difference, 1 inch.



FIG. 1.

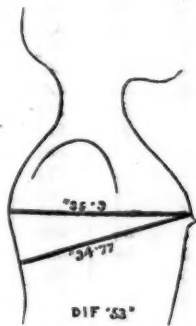


FIG. 2.

DISCUSSION.

Mr. HYDE CLARKE remarked that these anthropological observations were of practical and useful bearing. He had checked Col. Fox's figures, and found these fully supported his statements. In the lowest class the difference of measurement reached 2 inches and $2\frac{1}{4}$ inches. In the next there were ten cases of 1 inch, two of $1\frac{1}{4}$ inch, one of $1\frac{1}{2}$ inch, two of $1\frac{3}{4}$ inch, and one of $1\frac{7}{8}$ inch. He trusted that the President would follow up these inquiries. Of course, many recruits will improve; but then it will probably be found that this proportion will be less in those of lower standard.

A paper "On Molecules and Potential Life," by Rev. Dunbar I. Heath, M.A., *Treasurer*, A.I., was read by the author.

Mr. Brabrook read the following paper:—

On a PREHISTORIC ROAD, DUNCAN'S FLOW, BALLYALBANAGH, CO. ANTRIM. By G. H. KINAHAN, Esq., M.R.I.A., &c. [With woodcuts.]

DURING a short stay in the co. Antrim, my attention was called by J. Wyley, Esq., of Drumadarragh House, to an unrecorded ancient roadway that for centuries has been buried under an accumulation of peat, and only in recent years has been discovered while cutting turf. The bog called Duncan's Flow, in which this road or *cash* (*casán, a path*), is buried, is situated near the west boundary of the townland of Ballyalbanagh, co. Antrim (Ordnance Survey Map, sheet 39), and about four miles north of the small town called Ballyclare.

In the country hereabouts are the sites of numerous prehistoric structures, such as Liss, Moats, Carns, Gallaun, &c. To the north of Duncan's Flow, about a mile and a half, are the remains of what seems to have been a considerable settlement, consisting of larks or earth-caves, the site of a mill and dam, and an old church; while on Wee Collin, the hill immediately north of the bog, are the sites of several forts—one at least must have been of considerable size—while farther northward, north of the Glenwhirry river, moats and other forts existed. To the south of the valley of Duncan's Flow were observed two carns that contained kistveans, with urns and ashes, a large moat called Dunamoy, numerous forts—the largest, called Granny's Fort, or Lismashee, immediately south of the bog—and other structures, which seem to point to the place having been of considerable note at one time. From the north termination of the cash, or road, there seems to be the track of an ancient road leading toward the large fort on the west slope of Wee Collin, while to the south it terminated at a crag of rock protruding into the bog, said to be the site of a fort, but of which, however, there is now no trace. The cash seems to have been constructed in a straight line between these points, but now the centre portion bows slightly towards the west—probably due to the tendency of the bog to move down stream.

At the present time we find in the centre of the bog about five feet of "flow bog," under which are the roadway and deal corks (roots), that lie on four feet of black turf, that has oak sticks and corks at its base. In the Irish bogs,* but especially in the centre, south, and west of the island, the lowland or "red bogs" consist of a "clearing," or non-turf-producing portion; white turf; brown turf with deal corks and sticks at base; and black turf with oak corks and sticks at base. Usually there is no deal timber associated with the oak; in Duncan's Flow, however, there are some, but very few. These have been calculated to represent the following years of time:† Growth and decay of the oak forest, about 300 years; a foot of black turf, 400 years; growth and decay of the deal forest, 300 years; a foot of brown turf, 200 years; to which we may add, a foot of white turf and clearing, on an average, 100 years. In Duncan's Flow we find the roadway on the black turf,—on the same horizon as the deal forest. It is seven feet wide, and was formed of round oak longitudinal beams covered with transverse planking, or slabs of split oak. In the centre of the bog there were eight longitudinal beams (see fig. 1), but in the north and

* "Peat Bogs," *Quarterly Journal of Science*, July, 1874, p. 294 *et seq.*, by the writer of this notice.

† "Peat Bogs," p. 300 *et seq.*

south portions there are only three, one in the centre and one at each side (see fig. 2); the great number in the centre evidently having been used to bridge over a soft portion, while in



FIG. 1.

the firmer ground, near the margin of the bog, they were unnecessary. Three sections of the road were exposed when the bog was visited, and in that to the south, one of the longitudinal



FIG. 2.

beams was found to be deal timber. This roadway evidently was formed prior to the deal-forest age, as none of the associated deal corks occur under it, but all are on the same horizon. The oak timber to form the road probably was procured from the neighbouring upland, as on such situations they are known to have existed during and subsequent to the deal-forest age.* The road probably was used as long as the deal forest existed, and during its occupation, holes in the oak sheeting were mended with deal slabs placed across them (see fig. 3). After the four

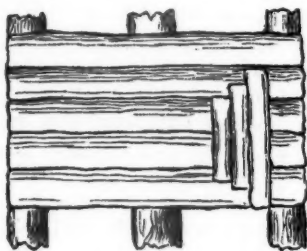


FIG. 3.

feet of lower peat had accumulated, which then represented at least sixteen feet in thickness, the climate must have changed for the place to drain and stop the growth of the peat, thus forming a surface, on which the deal trees grow; or it may have been drained artificially. Probably both were at work, as it appears likely, when the road was formed, some drainage also was accomplished, to keep surplus water away. That nature also was at work seems suggested, as not only here, but also universally in Ireland, deal forests sprang up on the red bogs

* "Peat Bogs," p. 297.

about this time. The road seems to have been abandoned and the deal forest destroyed at about the same time, which appears due to flooding, as the peat above both is "Flow bog" (Ulster), or "Monagay" (Munster)—that is, peat full of sedge and flaggers, which only grows and accumulates in marshes or flooded bogs. On the roadway there are now five feet of uncut turf, while ten feet of "good turf" are said to have been cut away. This, however, probably was not all brown turf; we may therefore suppose that ten out of the fifteen were brown, and the remaining five white turf. There now only remains the thickness of the clearing to be calculated. From what now remains this would appear to have been thin, as scarcely a foot of clearing is on the present banks, which would not represent more than two feet of undisturbed normal clearing. We must, however, remember that "bog stuff" is extensively used for farm purposes, and that probably at least half the original clearing has been carted away. If, therefore, we allow this, we would have about four feet of clearing, which is not excessive compared with the usual thickness general on all the lowland or red bogs. These different figures give us sufficient data to make an approximate calculation as to the time the cash was first constructed, also the number of years since the oak forest began to grow.

	YEARS.
7. Clearing, four feet	} at 100 years a foot . . . 900
6. White turf, five feet	
5. Brown turf, ten feet, at 200 years a foot . . .	2000
4. Growth and decay of the deal forest, including	} about 300
3. The time allowed for a change in the climate	
2. Black turf, four feet, at 400 years a foot . . .	1600
1. Growth and decay of the oak forest, about . . .	300
	<hr/> 5100 <hr/>

According to these figures, which are considered by some as a very low estimate, the "oak-forest age" was about 5,000 years ago, while the "deal-forest age" was about 2,000 years later, leaving the roadway or cash over 3,000 years old.

On the floors of, and the roads into, crannoges, we usually find cut reeds, ferns, or heather, sand, clay, or some such; but this roadway seems to have been swept clean, and the bog to have grown on the planking. In the bog, however, the following have been found—as I have been informed by Mr. J. Wilson, a farmer in the vicinity—near the south end of the cash: a stone hatchet, very large horns of a cow or ox, and four sticks like "walking staffs;" near the centre of the road-

way, where fig. 1 was taken, a shoe, in shape like a weaver's shuttle. It probably belonged to a woman or small man, "it was near twelve inches long, and very narrow;" also a carved block of wood, which seemed to represent the head and shoulders of a man of ordinary size.

Other submerged roadways already recorded in Ireland are as follow:—A roadway constructed somewhat similar to an American corderoy, in the bog between the old castle of the Oconnings (corrupted into Castle Connel) and the esker called Goig, co. Limerick. This road was under about twelve feet of "good peat," or at least 2,500 years old. It was made of round oak, but a few feet above the "deal-forest" corks.—"Mem. Geol. Survey Ireland." Explanation of sheet 134.

A roadway in the bog margining Loughnahinch, cos. Tipperary and King's. This evidently was made for the convenience of a crannoge in the lake, but its age is unknown.—*Dublin Quarterly Journal of Science*, vol. vi. p. 69.

A roadway in the "North flats" (reclaimed land), Wexford estuary. This ran south from Begerin Island to Great Island. It was constructed of oak longitudinal beams, supported on two rows of oak piles.—"Jour. Roy. His. and Arch. Ass., Ireland," vol. ii. (4th series) p. 435.

The PRESIDENT and Mr. RUDLER offered some remarks, and the meeting then separated.

ANTHROPOLOGICAL MISCELLANEA.

THE EASTER ISLANDERS.

THE following account has been extracted from an abbreviated translation of Dr. Philippi's work on Easter Island,* by Mr. Edwyn Reed, F.L.S. (Local Secretary for Chili). It relates principally to the present condition of the islanders, and appears to be derived from official reports by Captain Gana, of the Chilian navy, who visited the island in 1870 (two years after Capt. Pocock, in H.M.S. "Topaze"), and Père Eyraud, one of the earlier missionaries.†—J. PARK HARRISON.

The exact distance of Easter Island from the coast of Chili has been ascertained to be 2,030 miles, and it is 1,040 miles from Pitcairn's Island.

The very small number of species of plants shows that it can never have formed part of a great continent. All its indigenous plants appear to have arrived by accident, excepting, perhaps, the *torromiro*, which, however, Dr. Hooker would probably consider to be a simple variety of the New Zealand *Edwardsia microphylla*.

Most of the men are naked; yet they wear a kind of crown, some two inches thick, made of grass, round which they stick feathers of the frigate bird. Others make headdresses of seagulls' plumes. A few wear capes that come down to the knee. The women wear wide hats made of rushes. A piece of cloth‡ or matting, some six feet long, forms their dress, to which is added another piece round the loins, and a third on the shoulders.

The houses of the Easter Islanders are shaped like overturned canoes, or rather pirogues, which appears to support the tradition that the earlier inhabitants arrived by sea, and that their boats, dragged on shore and overturned, were the first habitations. Existing boats are only from eighteen to twenty feet in length, with the bow and stem slightly carved or scratched with figures. They are very narrow, and would not serve for long voyages. The pieces of wood of which they are formed are some of them two or three feet long by four or five inches wide, fastened together with sinnet.

The natives fight with stones, but sometimes use clubs, and a kind of spear or lance, about six feet long, with a flint (obsidian) head. They are very dexterous in plaiting and weaving, making nets and ribbands of the fibres of the *bohahú*. They are also very fond of sewing and carving. In the Santiago Museum there is a shell (*Cypræa maritima*) so well carved in wood that a European

* Printed in Spanish at Santiago in the autumn of 1873.

† Other particulars are given by Dr. Palmer, in the Journals of the Royal Geographical Society for 1870, and Ethnological Society for 1869.

‡ Made from the *bohahú*.

sculptor could not make a better copy. The natives count well, and have a name for each number. Their year is lunar, and they are much interested in the movements of the heavenly bodies.

Captain Gana reports that "the religious belief of the Easter Islanders was vague and unsettled. They practised no external adoration, yet they had priests, and many gods; amongst others the God of War, of Thieving, of Harvest, of Love, and of Good. The little wooden images, called *modomiro* (miro signifying "wood"), were revered but not worshipped." Their priests being all dead or carried away by the Peruvians, the Roman Catholic missionaries found the task of conversion easier than it would otherwise have been. The native priesthood appears to have been hereditary in certain families.

Tablets or small boards, with hieroglyphics and figures of animals not existing in Easter Island, are stated by Père Eyraud to have been met with in all the houses. Captain Gana saw three only. This is the only island of Polynesia where such precious documents have been found.

The disproportion between the number of men and women was remarked both by Cook and La Pérouse. But they thought it might be explained by the women concealing themselves in the huts. It is, however, said by Captain Gana to be really very great. He informs us that only one-third of the inhabitants are women, and that owing to this the girls are married at ten years old. The only marriage ceremony was a feast. Marriages between relations are unknown; and young girls live apart from the rest of the family until married. The wife is rarely allowed the honour of dining with her husband.

Suicides are frequent. This is attributed to the belief that the soul becomes divine, and enjoys perpetual happiness. Corpses are placed upon a heap of stones, with the heads towards the sea.

The Easter Islanders used to eat human flesh, but no one will now confess that he has done so. The bones were taken to Utuitu. Only captives taken in war were eaten.

Though there was but one king in Easter Island, cruel wars and fights frequently occurred, owing to personal feuds and covetousness. They fought at close quarters, and the vanquished became slaves of the victor, who took possession of all their goods and chattels, including wives and children.

Families own the land on which they reside, and cultivate as much of it as is required.

The language is a dialect very similar to that of New Zealand, as regards its harsh pronunciation and gutturals.

There are two traditions of the origin of the islanders—one, that a king arrived from Rapaite (or Oparo), who made all the stone statues. The other (related by Capt. Gana) is as follows:—Two large vessels, without sails, high at the prow and stern, arrived at Easter Island, with four hundred men, under the command of King Tocuyo. He disembarked at Anaquena, and shortly afterwards divided the land amongst his followers.

Since then the kings, who have succeeded him by right of primogeniture, are—Inumike, Vakai, Marama, Roa, Mitiake, Utuiti, Inucura, Mira, Oturaga, Inu, Iku, Ikukana, Ineujaja, Tukuitu, Aumoamana, Tupuirike, Mataibi, Terakay, Raimokaki, Gobara, Tepito, and Gregorio,* the last offshoot of the royal family of Easter Island, comprising twenty-two generations in all. It was the custom for the king of the island to abdicate on the marriage of his eldest son, but then he was not allowed to marry early. The king was considered a divinity, and had absolute power over life and property. His person was sacred, and no one might touch him. His hair was never cut. He received tribute in the form of food and labour. Next in rank there was a chief whose functions appear to have been purely military. This chief was elected annually.

M. Eyraud, on his arrival in the island (in 1863), found 1,800 inhabitants.† In 1868 there were 930, but in 1870 only 600 remained. This great diminution is said to be chiefly owing to the introduction of the small-pox by the survivors who were sent back from the Guano Islands after their deportation by the Peruvians. It is to be feared that the whole race will speedily die out. The surgeon of the Chilian expedition reports that he found, from an examination of a large number of the natives, that the greater part of them have a scrofulous constitution. The head is large, low, and wide; nose regular and extended; eyes dark and expressive, a little oblique; lips rather thick, but the mouth well formed; teeth firm, large, and white; feet and hands small and well-proportioned; the skin bronzed; hair stiff and black; beard slight and of the same colour; joints salient; facial angle 75° ; thorax weak, long, narrow, and flattened; sunk under the clavicles; and the blade-bones prominent and more than usually separated. The circumference of the thorax, 30 inches; stature, 5 feet $2\frac{1}{2}$ inches; pulse, from 76 to 84; respiration, 23 to 27; and the heat of the body, 96° F.

Great mortality in the island is caused by the development of scrofulous diseases in the children, and of tuberculous phthisis in the adults. Early marriages have a great influence in the production of pulmonary disease. The girls are married when scarcely ten years old, long before the system is sufficiently developed; their children are, consequently, weak and unhealthy.

In 1872, the French man-of-war "Flore" visited Easter Island. One of the officers, M. Julien Viaud, has published his diary, and given a description of the island, accompanied with sketches. An extract appeared in the *Globus* (vol. xxiii. No. 5, July, 1873), from which it appears that the French found only one European on the island (a Dane, named Schmid), who had been sent there from Tahiti to plant sweet potatoes. Cats and rabbits (only recently introduced) had multiplied so much that the natives gladly sold them to the sailors for a needle apiece.

The object of the French expedition was to procure some of the

* A child, since dead.

† See note, *infra*.

great stone statues for the Louvre, and an officer with five sailors landed for that purpose. All the inhabitants assisted, dancing and singing, and making a great uproar. In about an hour the work was completed, and the statues lay broken on the ground. "We chose one," says M. Viaud, "that will figure at the Louvre amongst the giants of the East."*

The principal antiquities taken to Chili in the "O'Higgins," Captain Gana's corvette, were the following:—

1. A statue, or moa, 5 feet high.
2. A sculptured block of stone.
3. Another block, 14 inches long, 9 inches wide, and 5 inches thick. The most striking features in this sculpture are the transverse ornaments on the tips of the ears, and a profusion of marks, which Dr. Philippi considers to be "juni."
4. A sculptured head, 10 inches long by 4½ inches wide.
5. A small double image, made out of a white stone, covered with a black pigment, except the pupils of the eyes, where the pigment is removed.†
6. A stone head, or mask, 12½ inches long by 11 inches wide.
7. A carved slab of stone, 5 feet 10 inches long, and 4 feet 6 inches wide, with "herronias," or bird-headed men in *alto relievo*.
- 8 and 9. Two small wooden figures, one male, the other female, the latter with a beard.

THE NATIVE RACES OF THE PACIFIC STATES OF NORTH AMERICA.

By H. H. BANCROFT. Vol. ii. London: Longmans, Green, and Co., 1875.

THE second volume of this important work is in no respect inferior, either in interest or execution, to the first. It treats of the civilised or semi-civilised nations of North America, viz. the Nahuas (including in succession Aztecs, Toltecs, &c.), to the south-west of the Gulf of Mexico, and the Mayas, Quichés, &c., to the south-east.

There are two introductory chapters, in the first of which the author reviews the various definitions of savagism and civilisation, and gives his own views on the subject. The principal point dwelt on is the necessity of association as a primal condition of progress, whence the corollary that there would have been no civilisation without towns. In the second chapter a general view is taken of the above-named nations; but the all-important question of the origin of civilisation, &c., in America is deferred, to be discussed in a future volume. "No theory on these questions could be of any practical value in the elucidation of the subject, save one that should stand out among the rest so pre-eminently well-founded as to be generally

* It appears, from Admiral Lapelin's report in the "Revue Maritime" (vol. xxxv., p. 106), that the head only of one of the larger statues was taken by the "Flore" to France. The population, in Jan., 1872, as estimated by the French, was 275. Some of the islanders, however, are now resident in Tahiti.—J. P. H.

† In Fiji, in public ceremonies, fans are used with double figures as handles.

accepted among scientific men." And this, the author believes, is not at present the case with any.

Seventeen chapters are devoted to the government, social condition, religion, education, commerce, war customs, arts and manufactures, and hieroglyphic records of the Nahuas. The remaining six chapters give a brief account of the Mayas, less information having been preserved concerning them. The civilised nations of Nicaragua are included in this last division, "though one, at least, of them, was of Nahua blood and language."

There are several illustrations of considerable interest, viz. an Aztec cycle; pictorial representations of the Aztec year and the Aztec month; and a calendar stone. Also, on p. 539, a specimen of picture-writing from the "Codex Mendoza," which describes the industrial education of Aztec children of both sexes; small circles indicate their ages. Plates are also given of the pictorial records of Aztec migrations which have appeared in less accessible works. That from the Boturini collection is especially interesting; in this painting not only the number of years are given that were spent in the migration, but the years themselves are named in a way explained in the text. The starting-point, Mr. Bancroft thinks, "was probably either on the lakes of Anáhuac, or in the south, beyond what is now the Isthmus of Tehuantepec."

Though there are ample references, the notes in this volume are less copious than in vol. i.; which some readers will consider an advantage, as avoiding repetition.

J. P. H.

THE MIND OF MAN; *being a Natural System of Mental Philosophy.*

By ALFRED SMEE, F.R.S., &c., &c. Illustrated with engravings.

London: G. Bell & Sons. 1875.

In the work before us mental philosophy is surveyed from a standpoint somewhat different to that from which we have been accustomed to view it. To this, albeit, we offer no objection, as we believe that observing human nature under various phases is eminently calculated to promote our obtaining a correct knowledge of it in the end. The name of Mr. Smeë, as an able and accurate student and expounder of nature, is not new to us, and his masterly work on "Instinct and Reason," published some years ago, led us to form high expectations of the present production, in which we have not been disappointed.

As regards the general plan of the book, he tells us in the preface that, "after much consideration, and the bestowal of intense and concentrated thought over a long period, I developed my natural system of mental philosophy, wherein the laws of mental action were attempted to be ascertained by a consideration of the structure and functions of the brain, the nerves, and of the organs of sensation, on the one hand, and by a study of the laws of electricity, on the other" (Pref. p. viii.). These principles have been already set

forth in different treatises well known to the public, and the substance of the above-named works has been incorporated in the present volume, which thus comprises, either in detail or as general principles, nearly everything which the author has written on the subject. (Pref. p. ix.)

The opening chapter treats on 'elementary ideas,' embracing the subject of sensations of different kinds, and of the impressions and feelings derived from them. In chapter ii. are discussed 'ideas originating in the mind itself,' wherein the writer treats on the question of instinct, and of ideas of various kinds, including those of modes of human action and of thought, of infinity, of God, of heaven, and of hell. 'Consciousness' is next treated of, after which we have a chapter devoted to the perplexing and often discussed, but no less interesting topic of "the will, and laws of human action." Mr. Smee expresses an opinion (p. 32) that "different persons are affected in various degrees by the effects of pleasure and pain. In some the immediate impression is more active, in which case they are called impulsive. In some the fear of the future is more active, when they are called timid."

A very valuable chapter, and one deserving of attentive study, follows 'on education, and the faculties of man at different periods of life.' Sound and practical hints respecting the conduct of education will here be found, whatever we may think of the author's fundamental theory. His observations, based as they are on intimate knowledge of the structure and mode of operation of the mind, should command earnest study. Following this chapter is one on the "discipline of the mind," in which he very correctly urges the importance of using every organ, and enforces a truth too often lost sight of, that "the different powers of mind should be subordinate one to another; each should have its proper influence; none should be in the ascendancy; for if there be any variation in the relative position of any of the faculties of man, difficulties may arise. Every part of the mind should be brought into regular exercise, that each may attain an equal strength, and none attain to an ascendancy to the detriment of the rest" (p. 45).

A chapter is devoted to the 'Origin of the Human Mind,' which he traces to "the physical structure of the human body, called the brain" (p. 46). He then discusses the extent of animal intelligence, but considers that "the mind of man is incomparably superior to any other living creature" (*ib.*); a fact which some modern psychologists appear to question, while certain human animals occasionally adopt proceedings calculated to throw doubt on this theory! The existence of a soul is not, however, denied in the present work, although the author, as we have seen, considers the mind only as the result of organisation. He subsequently, however, lays it down that the idea which the mind entertains of a soul is that of "a personal individuality, which we are forced to believe has an infinite existence" (p. 53).

Another chapter of some length is appropriated to the question of the 'Government of Mankind,' in which the important influences

of pleasure and pain, as regulating action, are considered. And in a very elaborate one, the subject of 'Words and Language' is amply debated. 'The Relation of Mind to God,' and 'Relation of the Mind to Religious Thought,' are topics that occupy two other chapters, which are followed by one on the 'Relation of the Mind to Moral Philosophy.' The influence of faith, and the question of fallacies, form separate topics for discussion.

In the chapter on the 'Theory of Mental Action' (chap. xv.) he argues, according to his principle of reducing every operation to electrical influence, that the mechanism of the organs of sensation is voltaic. Descriptions of a number of experiments are afforded in support of this theory, with commentaries upon each of them, and which will be read with interest by scientific inquirers, even though they may not carry conviction with them as regards the main principle contended for. According to the writer's theory, "man is made up of a great number of voltaic elements, so arranged as to form one whole. Hence, as the whole modifies the action of every single part, it follows that every idea existing in his brain modifies his action in any particular case" (p. 182). In accordance with this doctrine, the principles of the human mind are laid down in a number of axioms, amounting to sixty-eight in the whole. "Man," he tells us, "acts by electricity, which is set in motion through the muscular structures, whereby contraction ensues, and parts of the body are moved" (p. 187).

The work concludes with a chapter on the 'Voltaic Mechanism of the Nervous System,' in which Mr. Smee contends that the nervous system consists of a voltaic current. All batteries in animal bodies, he says, are compound batteries, one battery being in the body, the other in the brain. The work is illustrated by a number of elaborate and carefully prepared diagrams, which greatly assist in the comprehension of the various theories propounded. In addition to this, there is a very full and well-arranged index, composed, we are told, by the author's daughter, which adds essentially to the value of a book of this class, and the want of which renders many imperfect, and detracts much from their utility. As a whole, the present production of Mr. Smee is one of much interest, and of real value. Independent of the theories propounded by the author, his conclusions appear to be many of them sound, and all of them deserving of attentive consideration. The writer is a man who has consulted nature assiduously, and is an earnest searcher after truth. His work must consequently possess a merit which every real student of the subject of man will be able to appreciate; and it is in no respect the less entitled to consideration, from the circumstance that the author has had the courage to wander from the beaten track, and to think, and to propound theories, for himself; a fact which, in the eyes of many, will much enhance the value of this production, and must, at any rate, add substantially to the interest with which, by every man of scientific attainments, it cannot fail to be perused.

G. H.

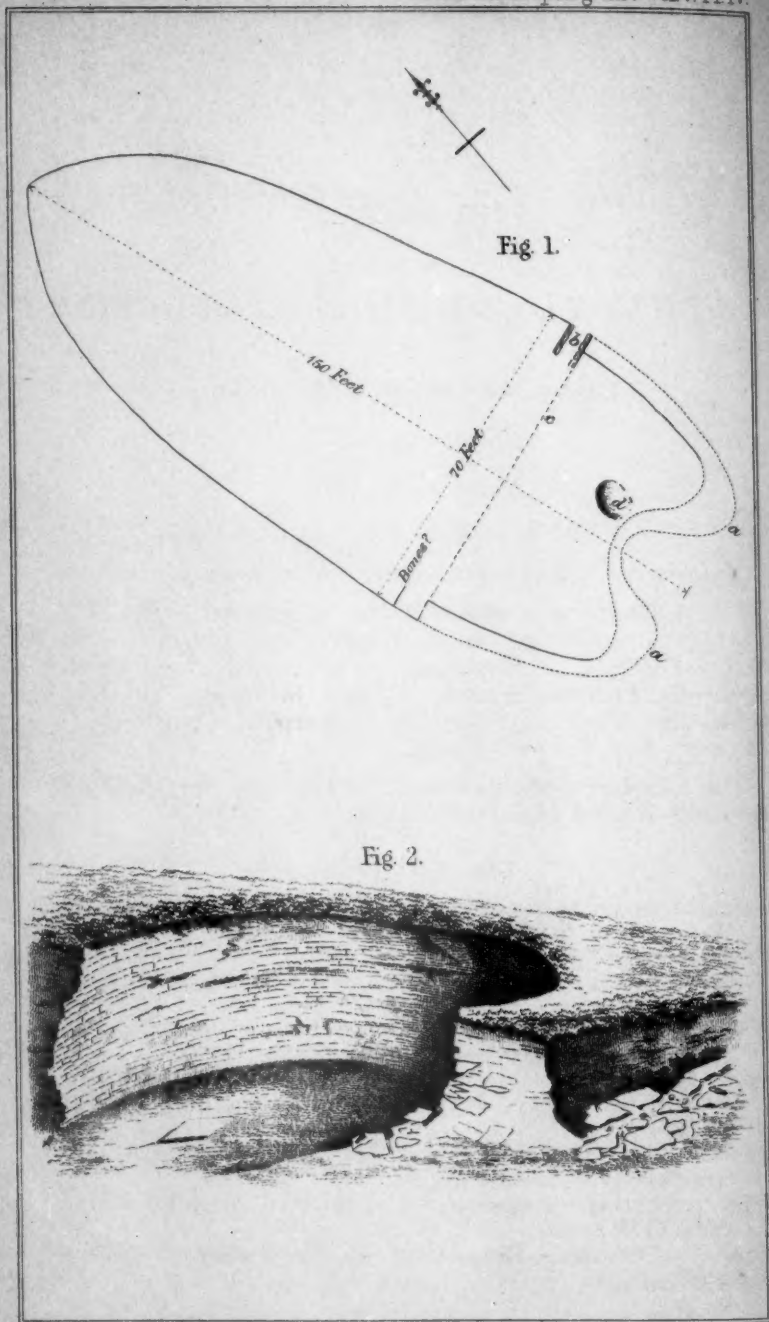
ANTHROPOLOGICAL NOTES AND QUERIES.—The President of the Anthropological Institute, having caused to be forwarded to the Governors of Colonies copies of this work, has received replies from many of them, and, in most cases, promises of help in obtaining the information asked for. Among those who have favourably responded to Colonel Fox's appeal, may be mentioned the Governors of Newfoundland, South Australia, Cape Town, Fiji, Ceylon, Singapore, Mauritius, Jamaica, Antigua, Bahamas, Barbadoes, and the Gold Coast. Governor Musgrave, of South Australia, has distributed numbers of copies to magistrates, inspectors of police, and others who are brought into contact with natives.

ARCTIC ETHNOLOGY.—The papers recently prepared for the Arctic Expedition by the Royal Geographical Society are arranged in two groups—one relating to Geography, the other to Ethnology. The latter section includes a series of papers on the 'Greenland Eskimos,' by Mr. Clements Markham; an essay on the 'Descent of the Eskimo,' by Dr. Rink; a paper on the 'Western Eskimo,' by Dr. Simpson; and, finally, the 'Report of the Anthropological Institute.' A copy of the volume has been presented to the Library.

PORTUGUESE DOCUMENT.—A photo-lithograph of a letter, preserved in the Torre do Tombo at Lisbon, has been presented to the Institute by the Secretary of the Portuguese Legation. It refers to the death of Vasco de Gama, and to a projected expedition in search of gold. The expedition should start in September for Malaca, and thence make a voyage to Timor or Ende, and winter in the islands. Inquiries would there be instituted about the occurrence of the precious metal, and an attempt would then be made to discover the happy island of gold. The letter is written by E. M. L. Godinho de Eredia, but the name of the person to whom it was addressed is unknown.

SOCIÉTÉ KHÉDIVIALE DE GÉOGRAPHIE.—Under this name a society has just been founded at Cairo. Its object is to study geography in all its branches, but especially to throw light on those parts of Africa which are still unexplored, or but little known. The inaugural address was delivered on June 2nd, by the President, Dr. G. Schweinfurth, and a copy of this discourse has been sent to the Library of the Institute.

BRITISH ASSOCIATION.—The next meeting of the Association will be held at Bristol, commencing on Wednesday, August 25th. Section D (Biology) will be presided over by Dr. Sclater, and the Anthropological Department of this section will be placed under Professor Rolleston. Members of the Institute intending to contribute memoirs should send them, if possible, by August 1st, addressed to the General Secretaries, British Association, 22, Albemarle Street, W.



LONG BARROW, "SWELL 1"

C.F. Kell, Inst. London. E. C.

FIG. 1. GROUND PLAN. FIG. 2. PENANNULAR CHAMBER.